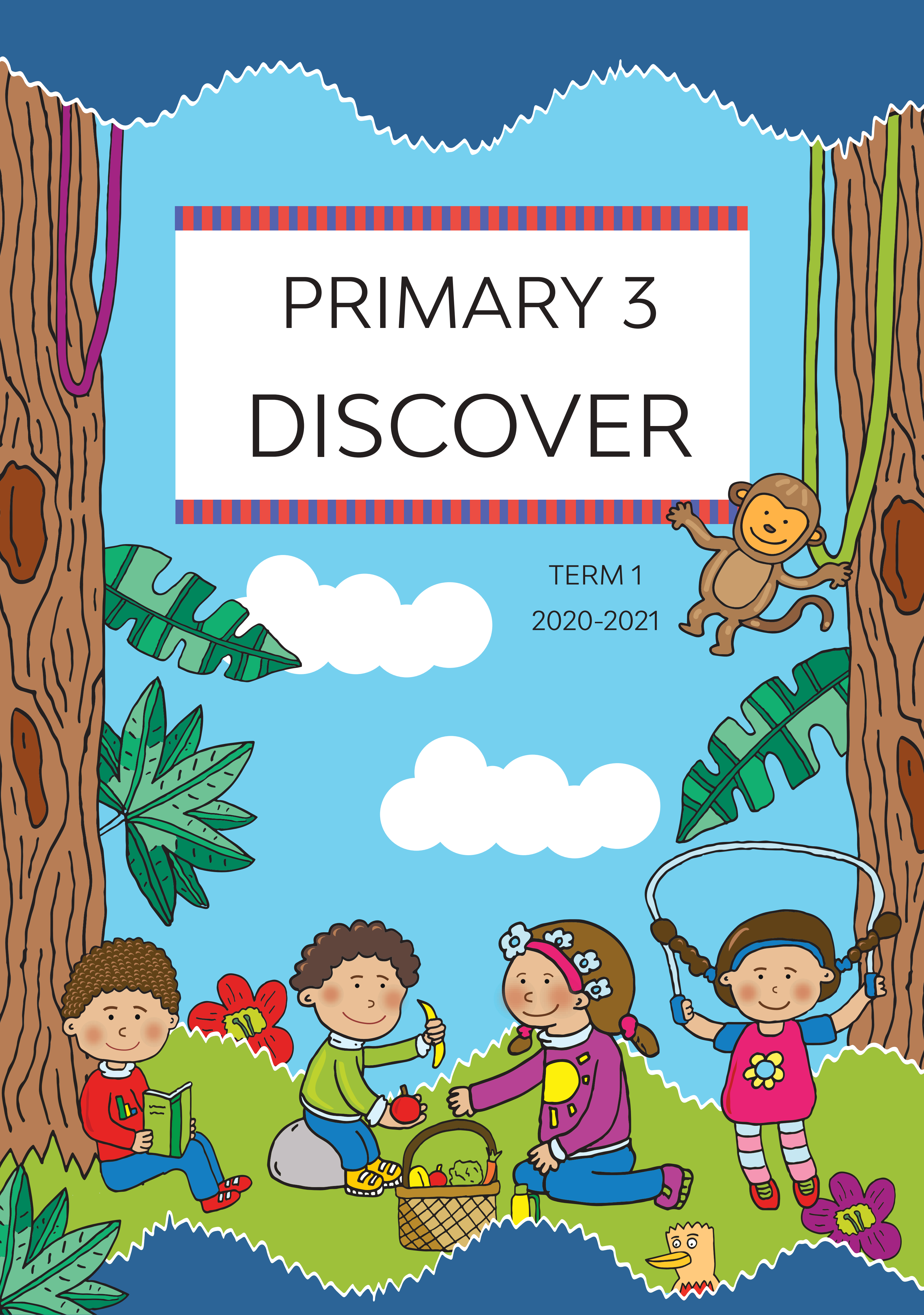

PRIMARY 3
DISCOVER
TERM 1
2020-2021

FOREWORD

This is a pivotal time in the history of the Ministry of Education and Technical Education (MOETE) in Egypt. We are embarking on the transformation of Egypt's K-12 education system starting in September 2018 with KG1, KG2 and Primary 1 continuing to be rolled out year after year until 2030. We are transforming the way in which students learn to prepare Egypt's youth to succeed in a future world that we cannot entirely imagine.

MOETE is very proud to present this new series of textbooks, Discover, with the accompanying digital learning materials that captures its vision of the transformation journey. This is the result of much consultation, much thought and a lot of work. We have drawn on the best expertise and experience from national and international organizations and education professionals to support us in translating our vision into an innovative national curriculum framework and exciting and inspiring print and digital learning materials.

The MOETE extends its deep appreciation to its own "Center for Curriculum and Instructional Materials Development" (CCIMD) and specifically, the CCIMD Director and her amazing team. MOETE is also very grateful to the minister's senior advisors and to our partners including "Discovery Education," "Nahdet Masr," "Longman Egypt," UNICEF, UNESCO, and WB, who, collectively, supported the development of Egypt's national curriculum framework. I also thank the Egyptian Faculty of Education professors who participated in reviewing the national curriculum framework. Finally, I thank each and every MOETE administrator in all MOETE sectors as well as the MOETE subject counselors who participated in the process.

This transformation of Egypt's education system would not have been possible without the significant support of Egypt's current president, His Excellency President Abdel Fattah el-Sisi. Overhauling the education system is part of the president's vision of 'rebuilding the Egyptian citizen' and it is closely coordinated with the ministries of higher education & scientific research, Culture, and Youth & Sports. Education 2.0 is only a part in a bigger national effort to propel Egypt to the ranks of developing countries and to ensure a great future to all of its citizens.

WORDS FROM THE MINISTER OF EDUCATION & TECHNICAL EDUCATION

It is my great pleasure to celebrate this extraordinary moment in the history of Egypt where we launch a new education system designed to prepare a new Egyptian citizen proud of his Egyptian, Arab and African roots - a new citizen who is innovative, a critical thinker, able to understand and accept differences, competent in knowledge and life skills, able to learn for life and able to compete globally.

Egypt chose to invest in its new generations through building a transformative and modern education system consistent with international quality benchmarks. The new education system is designed to help our children and grandchildren enjoy a better future and to propel Egypt to the ranks of advanced countries in the near future.

The fulfillment of the Egyptian dream of transformation is indeed a joint responsibility among all of us; governmental institutions, parents, civil society, private sector and media. Here, I would like to acknowledge the critical role of our beloved teachers who are the role models for our children and who are the cornerstone of the intended transformation.

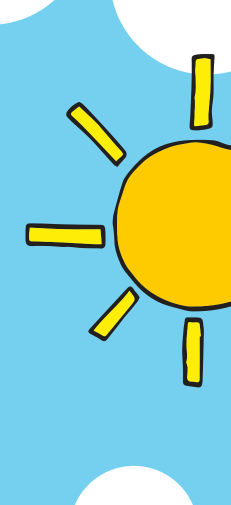
I ask everyone of us to join hands towards this noble goal of transforming Egypt through education in order to restore Egyptian excellence, leadership and great civilization.

My warmest regards to our children who will begin this journey and my deepest respect and gratitude to our great teachers.

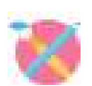
Dr. Tarek Galal Shawki
Minister of Education & Technical Education

NAME: --

CONTENTS



MAKING A STRONGER ME



LIFE SKILLS

Follow each direction. Write your answers neatly.

1. Copy the definition of "life skills" that the class has agreed upon.

____

____

____

2. Below are some of the life skills we will work on in class this year. Put a star in front of the skills you are good at already. Put a circle next to the skills you need to improve upon.

_______ I am good at organizing my work and staying focused.

_______ I am creative and show my ideas in different ways.

_______ I find ways to solve my problems and help others.

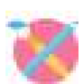
_______ I can communicate my ideas in many ways.

_______ It is usually easy for me to explain my thinking.

_______ I like to set goals to reach.

_______ I listen and respect others' opinions.

_______ I think about how others feel when playing or working together.



USING CRITICAL THINKING SKILLS

Look at the pictures below. These pictures are small parts of a bigger picture. Can you decide what the whole image is? Discuss with your Shoulder Partner, write your answers in the blanks, and then explain how you found your answers.



What do you think the image is?

____

What in the image helped you decide?

____

____



What do you think the image is?

____

What in the image helped you decide?

____

____



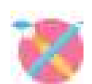
What do you think the image is?

____

What in the image helped you decide?

____

____



RIDDLES

Solve the riddles and write about the strategy you used to solve them.

1. My number is less than 10.
You can add my number 3 times to make the number 15.
What is my number?

Your number is ________________ .

This is how I solved the riddle: ____

____

2. I am a unit of measurement.
I can measure the length of an object.
I am useful for measuring the length of a paper clip.
What am I?

I am ________________ .

This is how I solved the riddle: ____

____

I can use critical thinking skills. My favorite strategy today was

________________________________ because ________________________

____





RUN AND JUMP

Look at this athlete who is competing in an event. The athlete runs down the track and then jumps at the line. What questions could we ask about what is happening?



There are lots of things we could measure in this photo. Record your questions about what is measurable. Example: How FAR did he run?

____

____

____

____

____

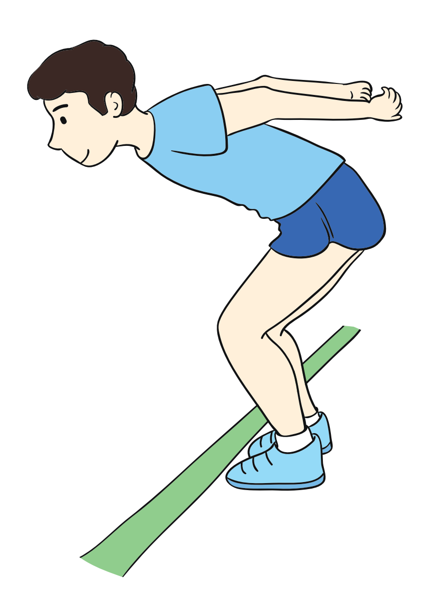
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HOW FAR CAN WE JUMP?

Read all instructions carefully before you jump and collect data with your group.

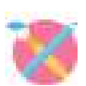
1. Stand with both feet on the line.
2. Jump forward as far as you can go.
3. Have another group member mark where your feet land.
4. Have a third group member measure the distance of your jump.
5. Record your distance below.



How far did you jump? Record your distance. I jumped ________________ cm.

Ask 15 students in your class how far they jumped. Record their answers using hash marks on the correct row of the chart below.

DISTANCE JUMPED	NUMBER OF STUDENTS
0-40 cm	
41-80 cm	
81-120 cm	
121-160 cm	
>160 cm	

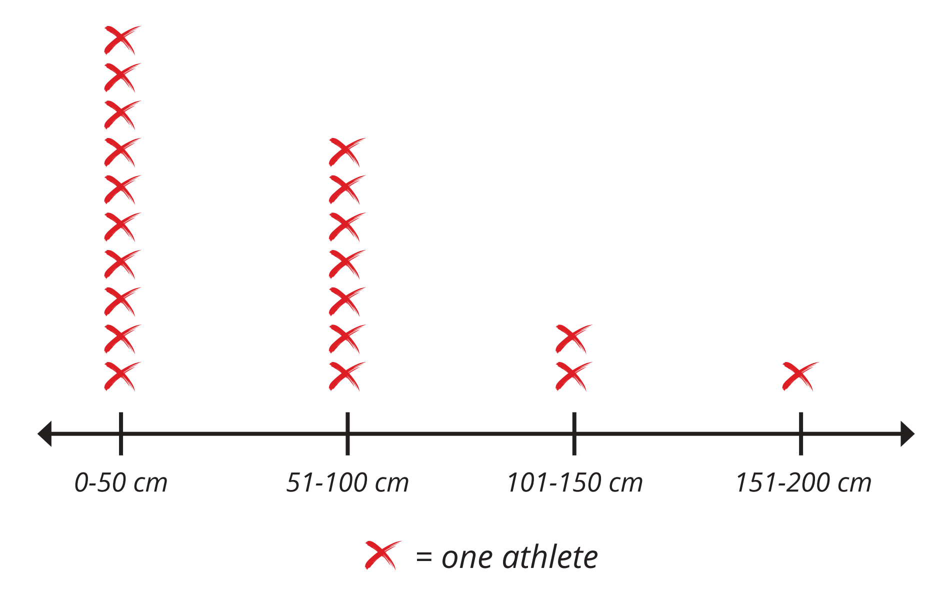


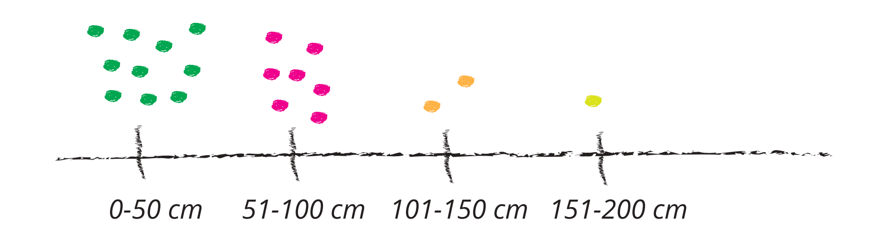
PRESENTING DATA

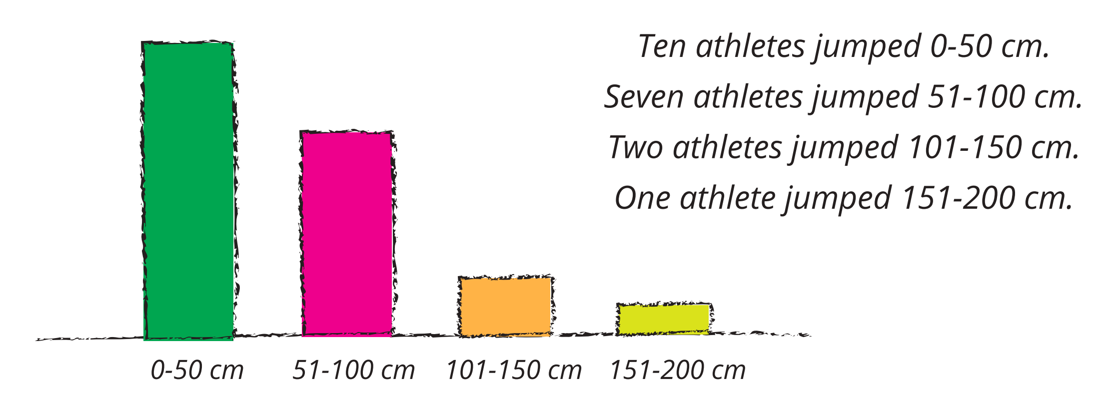
A group of athletes competed in a jumping event. Students collected data about them to answer the question: How high can an athlete jump? Look at the measurements they collected.

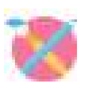
HEIGHT OF JUMP	NUMBER OF ATHLETES
0-50 cm	10
51-100 cm	7
101-150 cm	2
151-200 cm	1

Look at the three options below of how this data can be communicated. Circle the option that communicates these data the best.









GRAPHING HOW FAR WE CAN JUMP

Use the numbers on the "How Far Can We Jump?" page to graph the distances you recorded. Then answer the questions.

0-40 cm	41-80 cm	81-120 cm	121-160 cm	>160 cm

What range had the greatest number of students? ______________________

What range had the least number of students? ______________________

What information may be missing from your graph?

____

____

____





A NEW YEAR

Read the story.

Rashad was excited to start a new school year. The first week, he met his neighbor Zeina and they became friends. Rashad and Zeina spent lots of time together talking about building things. They had a lot in common. They were excited to start on a new class project. The class was going to write and perform a play about being healthy.

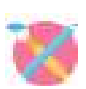
"Each group will get to write a script," the teacher announced. "First, decide on each person's role for the project. Then you will need to agree on the story."

Rashad and Zeina felt lucky that they got to be in the same group. Their group began picking roles for the project. Rashad loves building things, so he picked the role of creating the props. Zeina also likes to make things, so she decided to make the costumes. The other group members took the roles of script writer and schedule keeper.



Then it was time to start planning the story. Rashad had a good idea. He said, "I think we should tell a story about how fast Egyptian Arabian horses are." Zeina laughed at Rashad's idea. She said, "That's a terrible idea. It has nothing to do with being healthy. I think the best story to tell is about Sara Ahmed. She was the first Egyptian woman to win an Olympic medal."

Rashad was surprised that his friend did not like his idea. His feelings were hurt. He said, "I do not like your idea either. If we do not use my idea, I do not want to be in this group." He folded his arms and pouted.



WHAT WOULD YOU DO?

Match the solution you are most likely to use with each scenario. There may be more than one correct answer.

1. Your friend makes fun of someone in class.
2. Your friend pressures you to do something you do not want to do.
3. Your friend does not listen to your ideas.
4. Your friend tells your secret to other people in class.
5. Your friend spreads a rumor about someone in class.

a. Ask your friend to stop.

b. Get help from an adult you trust.

c. Walk away and find other friends to be with.

d. Be a friend—listen, support, and speak up.

e. Say nothing and walk away.

f. Ask for an apology.





ASKING FOR HELP

Read the story.

That night, Rashad was eating dinner with his parents and younger sister, Yasmeen.

“You would not believe what Zeina did,” Rashad said. “I thought we should tell a story about how fast Egyptian Arabian horses are. But Zeina laughed at me. The other kids in our group had different ideas too. She did not like any of them. I do not know what to do!” Rashad cried. “Zeina is my friend, but now it feels like we do not even like each other. All because we cannot agree about what story to tell for the play.”

Rashad’s parents were glad to see him excited about the play. They were also worried about how he worked with others. Rashad’s mom said, “I think it would be best for you to learn more about your friend’s idea. You might change your mind.”



“Yes, that’s a great idea,” his dad said. “Why don’t you ask everyone in the group to explain why they think their idea is best? Then you can take a group vote.”

Yasmeen had been listening to the conversation. “I do not think that idea will work. Zeina will still be mad at you. Just forget your idea and use her idea instead. Then Zeina will be happy, and you can play with your friend again.”

As Rashad helped clean up after dinner, he thought about his parents’ and sister’s advice.



MAKING A DECISION

Read the story.

The next day at school, Rashad presented his solution to the group. "I think we should share our ideas and explain why we think our idea is best. Then we can take a group vote."

Zeina said, "That sounds like a great idea." Each student in the group took turns presenting their ideas.



After everyone had shared, Rashad took a survey. He first made a table to collect the data. The first column listed all of the story ideas for the play. The second column was empty so he could add tally marks for every vote he collected. Each person in the group wrote their vote on a paper square. He collected the paper squares and tallied the votes on the data table. There were two story ideas that got the most votes: Zeina's idea and Rashad's idea.

At first Rashad was disappointed that his idea did not get the most votes. "Well..." said Zeina, "Horses can be athletes too. Let's write a story using BOTH of our ideas." Rashad was so happy that they could come to an agreement after all. This play was going to be great now that they were working so well together. The group got right to work on their script.



COMMERCIALS

Talk with your group about one of the commercials you have seen. Describe the strategies used to advertise the product. Decide whether each strategy is used to get your attention or provide information.

Commercial ______________________________

SELLING STRATEGY	DESCRIPTION	ATTENTION OR INFORMATION?
Band wagon: All cool people your age have one.		
Show results of a competition with another product		
Music		
Colorful packaging		
Famous people or cartoon characters		
Mention sale or price of product		
Other		

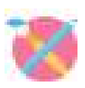
Is this commercial helping me make good choices?

____

____

Why or why not? ______________________________

____



A NEW PRODUCT: BRAINSTORM

Brainstorm ideas for your commercial. Listen to everyone's ideas in your group. Write all the ideas in your book. Be sure to name your product.

Product Name ______________________________

How will we get the buyer's attention?

____

____

What should we say about the product?

____

____

What words, sounds, or images can we use to persuade the audience?

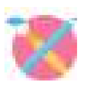
WORDS	SOUNDS	IMAGES

What else do we need to add?

____

____

____



PEER ASSESSMENT

Listen closely to the commercial being presented to you. Listen for strategies, facts, and whether or not the commercial gives you enough information to make a good choice.

Product Name ________________________________

Performers ________________________________

Strategies used to get our attention:

____

____

____

Facts about the product:

____

____

____

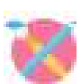
Is there enough information to make a good choice? ________________

Why or why not?

____

____

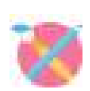
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STRATEGIES I CAN USE

Work with the class to list at least one or two strategies you can use for each of the four life skills below.

CRITICAL THINKING	*Use Think Time to understand a question and consider an answer before speaking.*
SELF-MANAGEMENT	*Set goals.*
COLLABORATION	*Listen to my team.*
COMMUNICATION	



MY GOALS

Follow the directions for each section.

1. Write two life skills you want to improve upon. For each one, write two strategies you can use to improve.

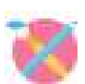
SKILL I WANT TO IMPROVE	STRATEGIES TO IMPROVE

2. Write one life skill you think you are very good at. Explain your thinking.

____

____

____



OUR CLASS PLEDGE

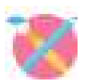
Write the class pledge neatly. Be sure to check spelling.





A STRONGER ME

Create a way to show the stronger you. You can write a story or poem, draw a picture, or choose another way. Take time to add details.



MY SELF-ASSESSMENT

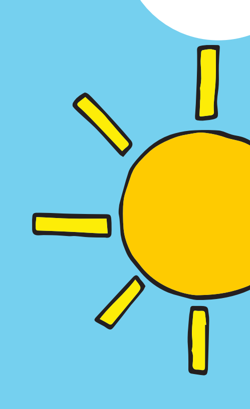
Read each statement. For each row, color the stars in the box that describes your effort.

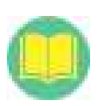
	☆	☆☆	☆☆☆
Academic Content	☆ I can solve a problem with help.	☆☆ I can solve a problem independently.	☆☆☆ I can solve a problem independently in more than one way.
Quality of Performance	☆ I spoke softly or was hard to understand.	☆☆ I spoke clearly.	☆☆☆ I spoke clearly and with excellent expression.
Life Skills	☆ I worked alone.	☆☆ I worked with my group.	☆☆☆ I worked with my group and we helped each other.

Rubric Assessment (for teacher use)

	Approaching Expectation (1)	**Meeting Expectation (2)**	**Exceeding Expectation (3)**
Academic Content	Participates minimally in discussions with others by contributing ideas, listening, or asking questions. *Speaking and Listening A.1.b*	Participates in discussions with others by contributing ideas, listening, and asking questions. *Speaking and Listening A.1.b*	Participates in discussions with others by contributing original ideas, listening attentively, and asking thoughtful questions. *Speaking and Listening A.1.b*
	Defines life skills and offers examples with help from teacher or peers. *Reading G.1.a,f*	Defines life skills accurately and offers examples. *Reading G.1.a,f*	Defines life skills accurately and offers personally relevant examples. *Reading G.1.a,f*
Quality of Performance	Cooperates with classmates when reminded or supported by teacher to create a class pledge. *Vocational Fields A.1.b*	Cooperates with classmates to create a class pledge. *Vocational Fields A.1.b*	Cooperates with classmates to create a class pledge and serves as a leader, encouraging others to participate. *Vocational Fields A.1.b*
	Listens to classmates in collaborative discussions when reminded or supported by teacher. *Speaking and Listening A.1.e.*	Listens to classmates in collaborative discussions in order to understand other's ideas. *Speaking and Listening A.1.e.*	Listens to classmates in collaborative discussions in order to understand, clarify points, or make connections to other's ideas. *Speaking and Listening A.1.e.*
Life Skills	Sets a goal and offers one strategy to help achieve it with help from the teacher or peers. *Self-management*	Sets a goal and independently offers at least one strategy to help achieve it. *Self-management*	Sets a goal and independently offers multiple realistic strategies to help achieve it. *Self-management*
	Uses general statements to explain own ideas when discussing them with others. *Critical thinking*	Uses appropriate details to support own ideas when discussing them with others. *Critical thinking*	Uses appropriate details and can answer questions to support own ideas when discussing them with others. *Critical thinking*

MAKING A HEALTHY BODY



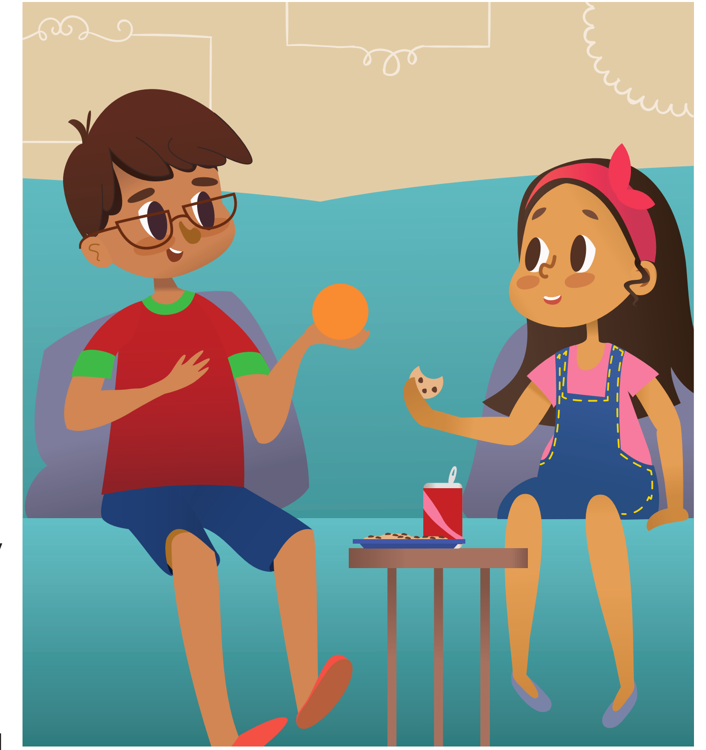


YASMEEN'S CHOICES

Read the story.

Yasmeen came home from school feeling a little tired and grouchy. She did not feel happy and full of energy like she usually did.

She went to the kitchen and thought about what she could have. Soda or juice? She took a soda. What should she have for a snack? An orange or cookies? Yasmeen knew she should pick fruit, but she was feeling a little yucky. She thought the cookies might cheer her up.



Yasmeen went to the living room and sat down on the couch. She turned on the television.

Just then, Rashad and his father came in the room. They were both sweaty. Rashad sat down next to Yasmeen.

"You're all wet!" yelled Yasmeen.

"We were out running." he said. "Running helps me clear my head and makes my body feel good."

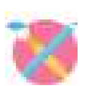
Yasmeen watched Rashad go into the kitchen and grab an orange. Then he poured two glasses of water. Yasmeen was not feeling any better. The cookies had given her a headache, and the soda upset her stomach.



Rashad sat down next to Yasmeen and turned off the television.

"This orange gives me more energy," Rashad said. "Why don't we go outside and play a little football, Yasmeen?"

This idea perked her up immediately. Yasmeen thought moving around might help her feel better. She chased her older brother outside.

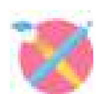


HEALTHY OR UNHEALTHY

Read each activity. Decide if the activity is healthy or unhealthy. Circle your answer.

1. Skipping breakfast every morning **healthy** **unhealthy**	2. Playing outside every day **healthy** **unhealthy**	3. Eating fruits and vegetables **healthy** **unhealthy**
4. Getting seven hours of sleep every night **healthy** **unhealthy**	5. Having arguments with your friends often **healthy** **unhealthy**	6. Sharing your feelings when you are sad or upset **healthy** **unhealthy**
7. Eating candy and snacks instead of lunch **healthy** **unhealthy**	8. Watching TV and playing video games for hours **healthy** **unhealthy**	9. Drinking water throughout the day **healthy** **unhealthy**





MY CHOICES

Write three good choices you will make this week. Then draw a picture of how you will feel if you make those choices.

1. ____________________

2. ____________________

3. ____________________

This is how I predict I will feel if I make those choices.



HEALTHY HABITS

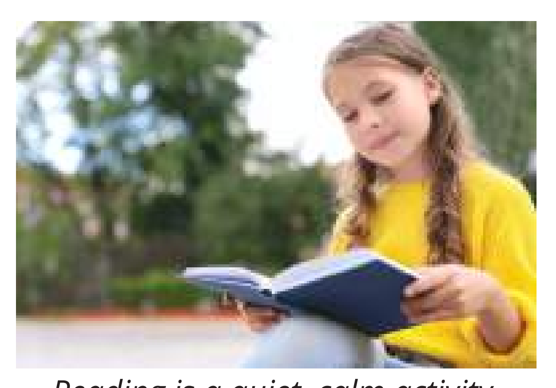
Read the text. Underline or highlight how each of the healthy habits helps your body. Answer the questions.

Get Enough Sleep: Have you ever stayed up late on a school night? What did you feel like in the morning? When you do not get enough sleep, you can get grumpy. Primary school children need around 10 to 12 hours of sleep every night. Getting enough sleep helps you think better and helps your body stay healthy.



Sleep helps our brains remember what we learn during the day.

Stay Positive and Calm: It is easy to get busy with activities like television and video games. It can be stressful if you stare at a screen for too long. Anger and worry are also distracting and tiring. When something goes wrong, it is important to have a positive attitude. Remember to take time to enjoy quiet activities that calm you. Some quiet activities are reading and taking a walk outside. Staying positive improves your mood. Staying positive and calm can also help your body fight some illnesses.



Reading is a quiet, calm activity.

Eat Healthy: Eating sweet snacks once in a while will not hurt you. But if you choose to eat those foods every day, you can harm your body. You might also find that you do not have the energy you need to get through the day. It is important to think about your food choices. Healthy food gives you nutrients your body needs and gives you energy to work and play.



Fruits, vegetables, and grains are healthy foods our bodies need.

Stay Active: Physical activity takes energy, but exercise also helps you feel more alert and less tired. An hour of movement every day is a good goal for most primary school children. Staying active helps your body stay strong. Staying active can improve your mood and help you focus on school.



A sport like football is one way children can stay active.

You make choices every day. You choose what to wear and what books to read. You also often choose what to eat and what activities to do. Healthy habits make your body healthy.

Get Enough Sleep

1. What is one reason you should get enough sleep?

____

2. What time do you usually get up for school?

____

3. What time would you need to go to bed to get 12 hours of sleep?

____

Stay Positive and Calm

4. What is one quiet activity suggested in the passage?

____

5. Name a quiet activity you enjoy that is not listed in the passage.

____

Eat Healthy

6. What can happen to your body if you eat too many sweet snacks?

___

7. What is your favorite healthy snack?

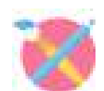
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Stay Active

8. How can staying active help you at school?

___

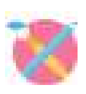




HEALTHY HABITS TRACKER

Read the activities on the chart. Add your three goals. Then use this chart to check off the things you do each day to keep your body healthy.

HEALTHY HABIT	SATURDAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Get Enough Sleep							
Stay Positive and Calm							
Eat Healthy							
Stay Active							



BRAIN BREAK

Create your own brain break activity. Write the name and a short description for your activity. Draw a picture of yourself doing the activity. Then write one way this activity helps your body to stay healthy.

____

Brain Break Activity Name

Brain Break Activity Directions:

1. ____
2. ____
3. ____
4. ____

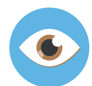
How does this activity help our bodies to stay healthy?



MAP OF THE HUMAN BODY

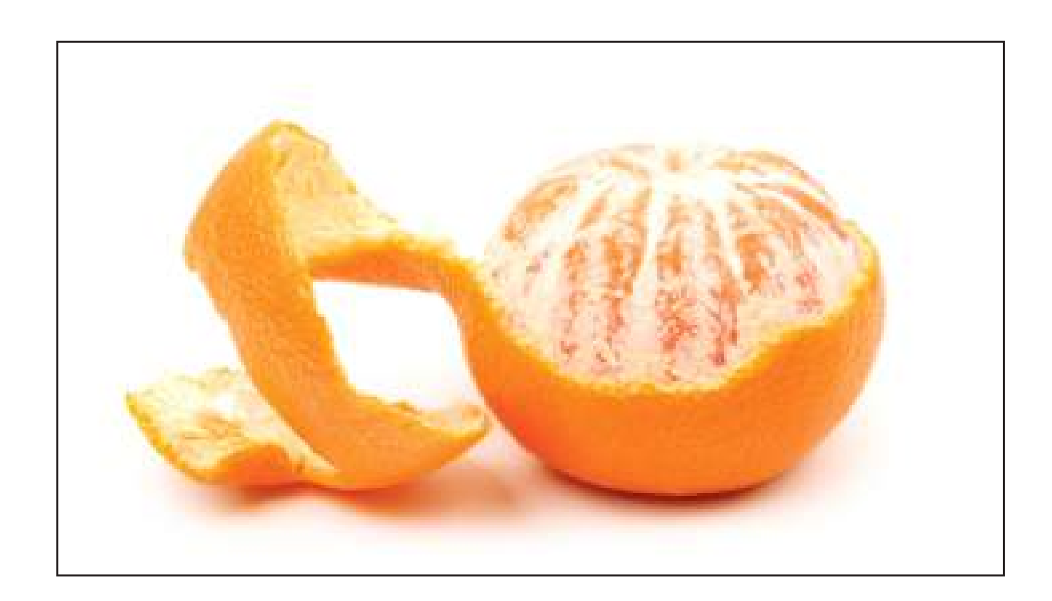
Look at the picture. What parts do you see labeled?

Heart
Stomach
Veins
Bones
Skin
Muscle



ARE WE SIMILAR?

Look at the pictures. How are they similar and how are they different? Finish the sentences below the images.





They are similar because

They are different because



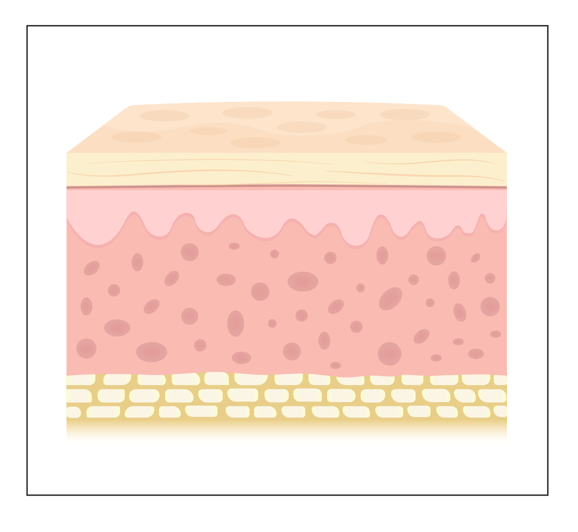
OUR SKIN PROTECTS US

Read the text. Underline how our skin protects us. Circle ways you can protect your skin.



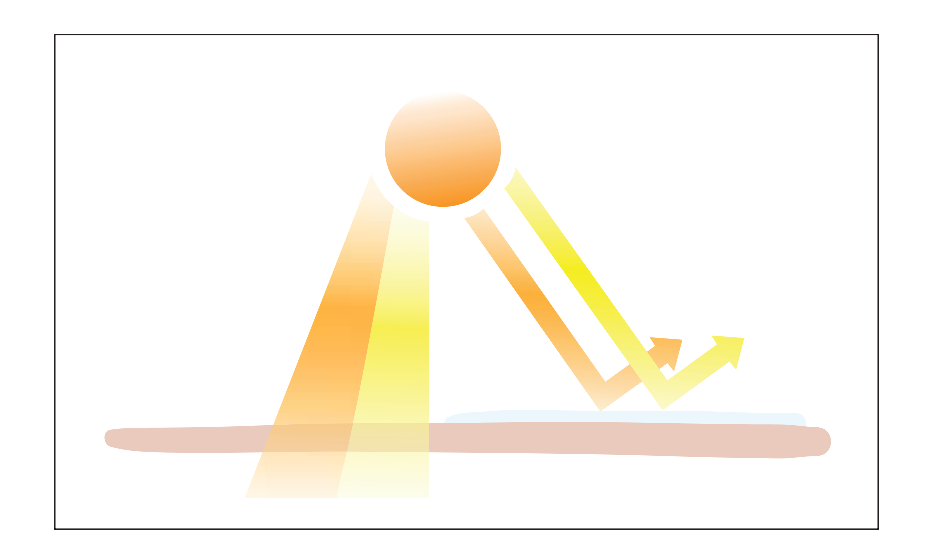
Our skin is all that stands between us and the outside world. It protects us from harmful germs and rays from the sun. It keeps fluids in and helps keep our temperature constant. Our skin weighs about 4 kilograms. It is the largest organ in our body.

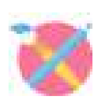
Our skin is made up of multiple layers. Some you can see, and some are under the surface. The top layer is about half as thick as a sheet of paper.



We make new skin all the time. Constantly making new layers keeps our skin healthy and whole. Our skin provides good protection.

The rays of the sun can hurt our skin. When we are in the sun, our skin makes a substance to guard against harmful rays. Sunscreen can help protect against harmful rays. However, the best way to block out the sun is to cover up. If we take good care of our skin, it can protect us for a long time.





PROTECTING OUR SKIN

Read the instructions. Record your predictions. Then follow the steps to complete the experiment.

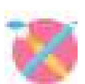
Materials you will need:

- One piece of construction paper (dark color)
- Sunscreen lotion or spray
- White crayon or chalk

Instructions:

1. Fold a piece of construction paper in half.
2. Rub a VERY SMALL amount of sunscreen on ONE side of the paper.
3. Put the paper in direct sunlight for most of the day.
4. Record your observations.

SUNSCREEN	NO SUNSCREEN
I predict...	I predict...
I observe...	I observe...



INVESTIGATION CONCLUSIONS

Use the information you recorded during the investigation to answer the questions.

1. What happened to the side without sunscreen? Did the paper's color change or stay the same?

___

___

___

2. How is the side with sunscreen different from the side without sunscreen?

___

___

3. You saw the effect sunscreen had on paper. What effect do you think sunscreen has on our skin?

___

___

4. What does this investigation teach us about the importance of using something to block our skin from sun rays?

___

___



BONES AND MUSCLES WORK TOGETHER

Read the text.

Your body is made of many parts that work together to keep you alive. Bones and muscles work together to help you move and protect soft organs.

Movement



Your bones make up your skeleton. Your skeleton could not move without muscles. Most muscles are attached to bones. When you move your muscles, your skeleton moves, too. Muscles lift and turn bones to help you eat, exercise, and play instruments.

Hold your arms out to your sides. Can you feel muscles working? Are your shoulders getting tired? Shoulder muscles are attached to your arm bones. These muscles lift and move your arms.

Think of all the ways your body moves. When you walk, muscles move bones in your legs and feet. When you chew, muscles pull your jaw up and down and side to side. Even when you are sleeping, muscles move your ribs to help you breathe.

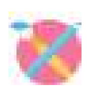
Protection



Muscles and bones have another important job. They shield soft organs like your heart, lungs, and brain. Organs do a lot of work to keep you alive, so they must be protected.

Your skull bones work kind of like a helmet. If you bump your head, your brain is shielded. Can you feel bone behind your eyebrow? If you get hit in the face with a football, this bone protects your eyes. Muscles also shield your eyes by squeezing them shut. Many organs are found in your chest and torso. Your ribs form a protective cage around your chest. Can you feel them? These bones shield your heart and lungs.

From protecting your brain to wiggling your toes and fingers, your bones and muscles have many jobs. They work together to keep you safe and on the move.



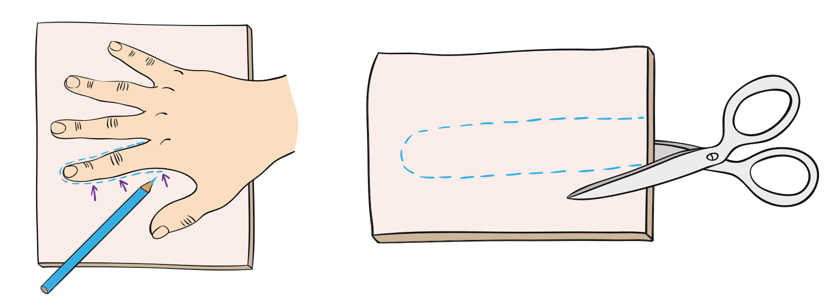
MECHANICAL FINGER

Read all instructions carefully before you begin to build your mechanical finger.

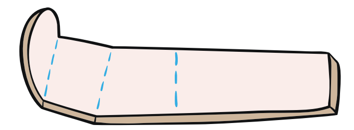
Materials you will need:	
• One piece of cardstock • One drinking straw • Scissors	• One piece of yarn, 30 cm • Glue or tape

Instructions:

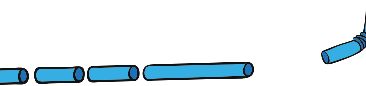
1. Trace your pointer finger on a piece of cardstock. Cut out the finger.



2. Draw lines where your finger bends (three lines total). Bend the paper finger along the lines. These are the joints.



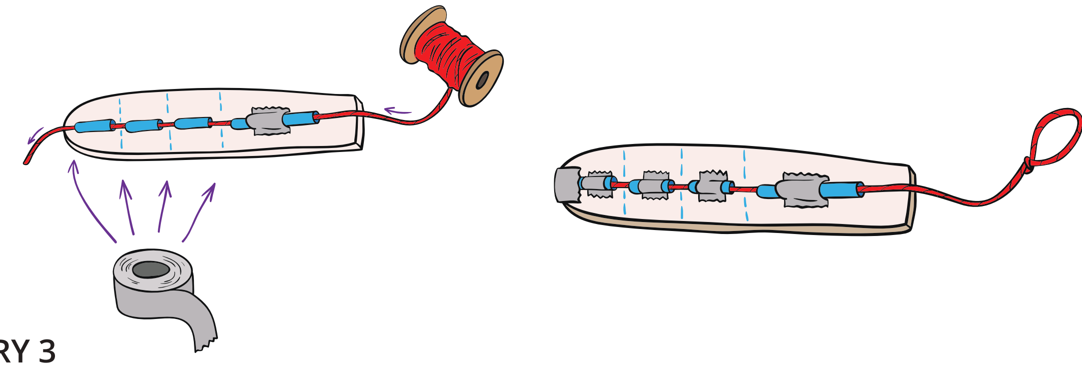
3. Cut the straw into four small pieces.



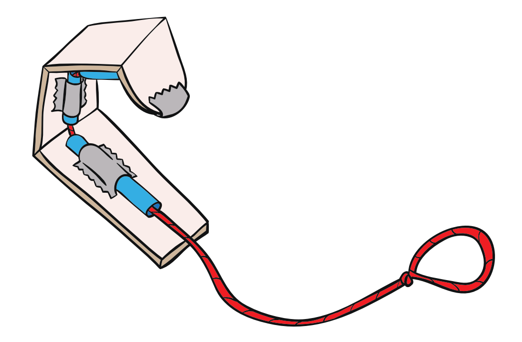
4. Glue or tape a piece of straw onto each of the four sections of the finger.

5. Push a piece of yarn through all of the straws. The knot should be at the tip (top) of the finger.

6. Tape the knotted end of the yarn to the fingertip.



7. Hold the base of the finger flat on the desk. Pull the yarn near the base of the finger to move it.



Answer the questions.

1. What part of your model represents the muscles?

____

2. What part of the model represents the bones?

____

3. How do the bones and muscles in your model work to make the finger move?

____

____

____

____



WHAT HAPPENS TO THE FOOD YOU EAT?

Read the text.

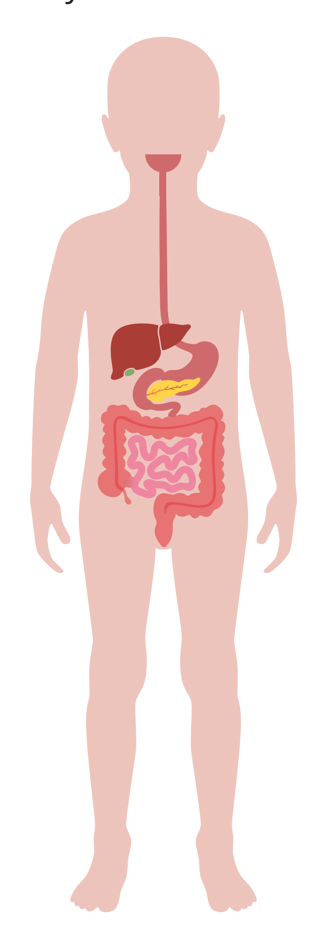


A train, plane, and car all need fuel to run. The fuel provides energy. Our bodies also need fuel for energy, but we do not use the same kind as trains or cars. Luckily, the human body runs on a variety of delicious fuels. We get energy from the food we eat. Food contains thousands of different nutrients. Nutrients provide some of the energy that the human body needs.

The body has a process that changes the food we eat into simpler parts. Once food is broken down, the body absorbs it to get energy

Digestion begins when you put food in your mouth. Chewing breaks up food into smaller pieces. This makes it easier for saliva in your mouth to soften the food and begin the breakdown. After you swallow, muscles push the food down to your stomach.

Inside your stomach, muscles churn acid to further break down the food. Digested food leaves the stomach. The nutrients are carried away in the blood, giving all parts of the human body energy to run.





HOW THE STOMACH WORKS

Read the instructions. Follow the steps to make a model stomach. Draw what you observe.

Materials you will need:

- Lemon juice, about 60 mL
- Plastic resealable bag
- Cracker

Instructions:

1. Pour the lemon juice into the plastic bag. The juice represents and acts like the acid in your stomach.

2. Break the cracker into a few pieces. This is what your teeth and tongue do before you swallow food.

3. Put the cracker into the bag and zip it up.

4. Carefully shake the cracker in the lemon juice. You can use your hands to gently squeeze it too. This is what the muscles in your stomach do to squeeze food during digestion.

5. Describe what happens to the cracker as your stomach model digests it.

CRACKER BEFORE DIGESTION	CRACKER AFTER DIGESTION

I observe

____

____

Answer the questions.

1. Why do our bodies need to digest the food we eat?

____

2. How does the stomach help digestion?

____





MY HEART

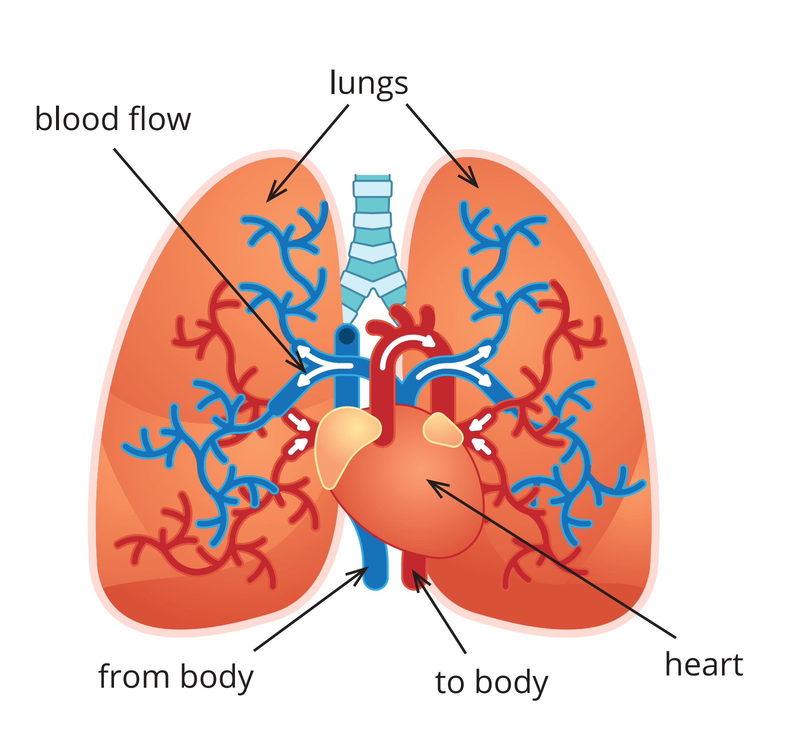
Read the story with your Shoulder Partner. Use a pencil to underline words you do not know.



Your heart has an important job. It keeps blood moving through your body. Blood carries oxygen and nutrients to every part of your body. The heart is a muscular organ about the size of your fist. It fills with blood when it expands, or stretches. When it contracts, or squeezes, it pushes blood out into blood vessels that run through the body.

Blood returns to the heart from the body through the veins. It enters the right side of the heart. The heart then pushes blood to the lungs. Oxygen from the air we breathe is added to the blood in the lungs. Blood filled with oxygen travels from the lungs back to the heart. It enters the left side of the heart. The blood is then pumped to the rest of the body through arteries to deliver the oxygen and other nutrients.

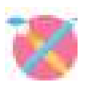
The heart beats many times per minute. Each beat pushes blood through the body. The heart continues to beat for your whole life.



FUN FACT

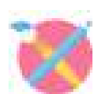
Laughing is a good workout for your heart.

KEY
Red = oxygen-filled blood
Blue = oxygen-depleted blood



ABOUT MY HEART

Write your own haiku about the heart.



EXERCISING MY HEART

Work with your partner. Perform each activity for 15 seconds, 1 minute, and 2 minutes. Record your pulse immediately after completing the activity. Add the pulse count 4 times to get your heart rate in beats per minute. Add your own activity to test in the bottom row. Answer the questions after you finish.

1. What is your hypothesis about your heartbeat when performing different activities?

____

____

2. Explain your thinking. ____________________________

____

Heart Rate = beats per minute

(Pulse is counted for 15 seconds, added together 4 times)

Example: Pulse count = 12; 12+12+12+12 = 48 beats per minute

Activity	Time Performed	Calculate Heart Rate
Sitting	15 seconds	____ + ____ + ____ + ____ = ____
	1 minute	____ + ____ + ____ + ____ = ____
	2 minutes	____ + ____ + ____ + ____ = ____
Walking	15 seconds	____ + ____ + ____ + ____ = ____
	1 minute	____ + ____ + ____ + ____ = ____
	2 minutes	____ + ____ + ____ + ____ = ____

Jogging in place	15 seconds	____ + ____ + ____ + ____ = ____
	1 minute	____ + ____ + ____ + ____ = ____
	2 minutes	____ + ____ + ____ + ____ = ____

Playing a computer game	15 seconds	____ + ____ + ____ + ____ = ____
	1 minute	____ + ____ + ____ + ____ = ____
	2 minutes	____ + ____ + ____ + ____ = ____

____________	15 seconds	____ + ____ + ____ + ____ = ____
	1 minute	____ + ____ + ____ + ____ = ____
	2 minutes	____ + ____ + ____ + ____ = ____

1. What is the difference in your pulse between 2 minutes of jogging in place and 2 minutes of using the computer?

____

2. Which activities do you think provided the greatest health benefits?

____

3. Was your hypothesis correct? Why or why not?

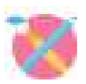
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TREE OF HEALTH

Write important facts you have learned on the leaves. Color and cut out each leaf, or copy your facts onto construction paper leaves.



FOUR STEPS OF THE WRITING PROCESS

Read each step. Write an explanation for each step after class discussion. Put a check mark in the box when you complete each step in your writing.

☐ **Planning** ______________________________

____

____

☐ **Drafting** ______________________________

____

____

☐ **Revising** ______________________________

____

____

☐ **Publishing** ______________________________

____

____



PLANNING

Brainstorm ideas within your expert group. What are the most important facts you want to add to your story? Write as many ideas as you can.



DRAFTING

Listen to directions given by your teacher. Write your ideas in complete sentences.

Opening sentence:

___

___

Important facts to know:

___

___

___

___

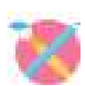
___

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Closing sentence:

___

___

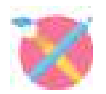


REVISING

Listen to directions given by your teacher. Put a check in the box after a friend has helped to peer edit your writing.

	I have used correct punctuation. I added a period at the end of each sentence.
	I checked for capitals at the beginning of my sentences. I capitalized names.
	I have corrected all my spelling.
	My sentences are complete thoughts with a noun and a verb.
	My sentences are in logical order.





MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

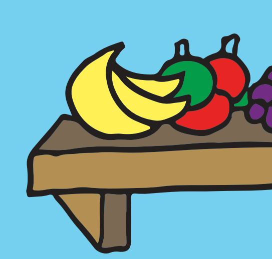
	☆	☆☆	☆☆☆
Academic Content	☆ I can identify and share a detail about the skin, muscles and skeleton, stomach, and heart with help.	☆☆ I can identify and share a detail about the skin, muscles and skeleton, stomach, and heart.	☆☆☆ I can identify and share several details about the skin, muscles and skeleton, stomach, and heart.
Quality of Performance	☆ I can write sentences that show my understanding about the human body with help.	☆☆ I can write clear sentences that show my understanding about the human body.	☆☆☆ I can write clear sentences that show a deep understanding about the human body.
Life Skills	☆ I can use a checklist when editing my writing with help from a peer.	☆☆ I can independently use a checklist when editing my writing with a peer.	☆☆☆ I can independently use a checklist when editing my writing with a peer and create checklists for myself for other tasks.

Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Identifies the skin, muscles and skeleton, stomach, and heart with support from peers or the teacher. Shares a basic detail about each. *Science C.1.a.*	Identifies the skin, muscles and skeleton, stomach, and heart. Shares a basic detail about each. *Science C.1.a.*	Identifies the skin, muscles and skeleton, stomach, and heart. Shares multiple details about each. *Science C.1.a.*
	Writes informational text that includes details to show understanding with support from peers or the teacher. *Writing C.1.a.*	Writes informational text that includes details to show clear understanding. *Writing C.1.a.*	Writes informational text that includes thoughtful details to show clear understanding. *Writing C.1.a.*
	Improves writing after receiving feedback with support from peers or the teacher. *Writing D.1.b and c*	Improves writing after receiving feedback from peers. *Writing D.1.b and c*	Improves writing after receiving feedback from peers and supports others in revising their writing. *Writing D.1.b and c*
	Creates artwork that does not help to support the reader's understanding of the body part. *Visual Art B.1.c.*	Creates artwork that supports the reader's understanding of the body part. *Visual Art B.1.c.*	Creates detailed artwork that supports the reader's understanding of the body part in a unique way. *Visual Art B.1.c.*
Quality of Performance	Organizes facts about the human body in a logical order with support from peers or the teacher.	Organizes facts about the human body in a logical order.	Organizes facts about the human body in a logical order. Shows originality or exceptional creativity.
	Communicates basic information about the human body but with little clarity and/or detail. *Science A.1.g.*	Communicates information about the human body clearly, with sufficient detail. *Science A.1.g.*	Communicates information about the human body clearly, with exceptional detail and clarity. *Science A.1.g.*
Life Skills	Uses a checklist to assist with peer editing when supported by peers or the teacher. *Sharing*	Uses a checklist effectively to assist with peer editing. *Sharing*	Uses a checklist effectively to assist with peer editing. Develops checklists independently to assist with other tasks. *Sharing*
	Manages the process of writing by following the steps of the writing process when guided by the teacher. *Productivity*	Manages the process of writing by following the steps of the writing process using a graphic organizer. *Productivity*	Manages the process of writing by following the steps of the writing process independently. *Productivity*

GET FIT WITH HEALTHY EATING







A CANTEEN AT SCHOOL

Read the story below. Circle unfamiliar words.

"Mother! Father! Where are you?" Rashad yelled as he slammed the front door closed.

"Rashad, please do not slam the door. We are here. Did you have a good day at school?" asked his mother.

"Yes, Mother. I had a very good day at school. Do you remember that we are learning about health in class?" replied Rashad as he chose a piece of fruit from the plate on the table.

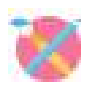
Mother turned to Rashad with a smile. "I remember. I am very happy you are learning about health. I notice you are choosing much better foods for your snacks. What did you learn today that has made you so excited?"

"Since we have worked so hard, our teacher asked if we would like to have a canteen at school. Do you know what a canteen is?" Rashad hopped around his mother, waiting for an answer.

"Yes. It is a place to get food, such as snacks. Usually you pay for the food at a canteen. Will you be getting a canteen at school?" Mother seemed surprised to hear this news.

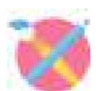
"Our teacher is wondering what foods we would want to have in a canteen. It is our assignment to give him ideas. I hope we can have a canteen. I think it would be fun. I should get started brainstorming." Rashad ran to the table to begin his list of foods for a canteen.





A HEALTHY SPACE

What could a healthy space at your school look like? Draw a picture and label your drawing.



FOOD FOR A SCHOOL CANTEEN

Read the story. How do your ideas compare to Rashad's? Answer the question before reading the story.

What are three foods you would put in a canteen?

______________________ ______________________ ______________________

The students in Mr. Mahmoud's room were excited to go to class. Everyone had ideas for food in the canteen. Rashad and Zeina shared suggestions before class started. They were surprised that their ideas were different.

Zeina offered her list first. "The top three foods I would like to put in the canteen are popcorn, canned juice, and apples."

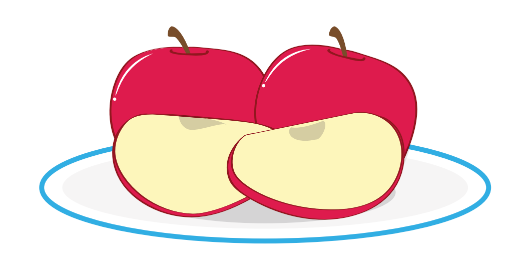
Rashad listened closely and then shared his three choices. "I would like to have apples too, but my other choices are yogurt and sweets. I know we are studying health, but sweets give me energy to get through the day."

Zeina thought about Rashad's comment. "I would like to have sweets too. Let's see what Mr. Mahmoud says. I have seen him eat sweets. I like your idea about yogurt. I wonder how we could keep it cold."

Rashad smiled. "Yes, I think everyone eats sweets. I never thought about keeping yogurt cold. I wonder if it has to be cold. We have lots of questions to ask Mr. Mahmoud."





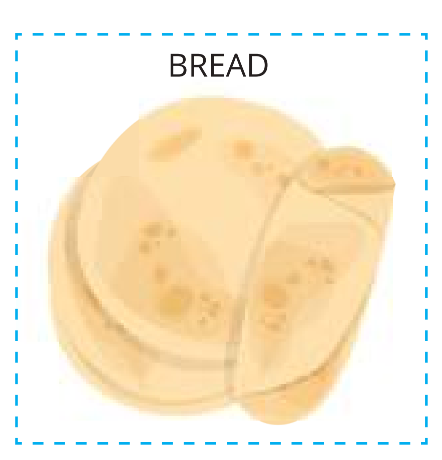


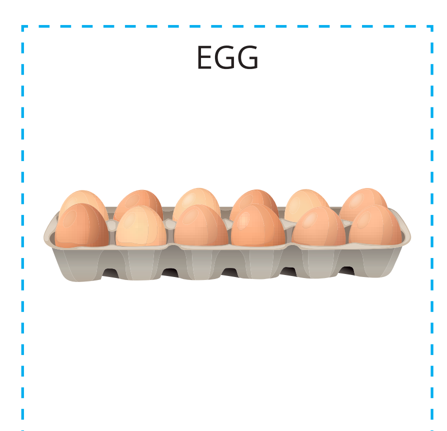


SORTING FOOD

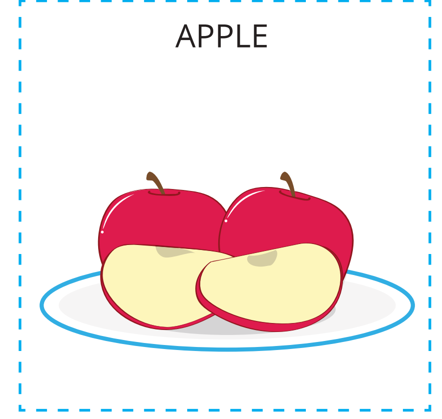
Read and cut out the cards. Decide on categories to sort the cards into.

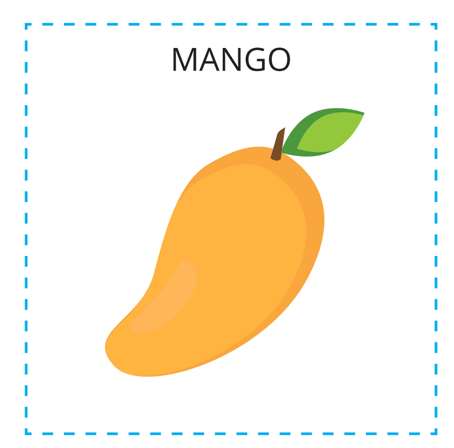




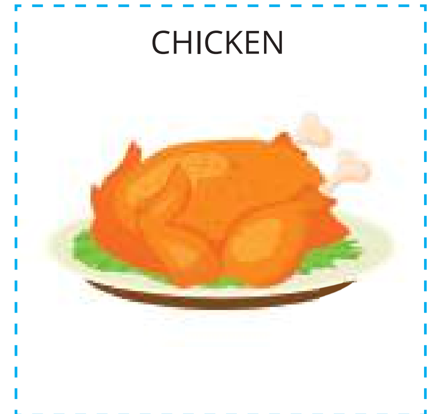


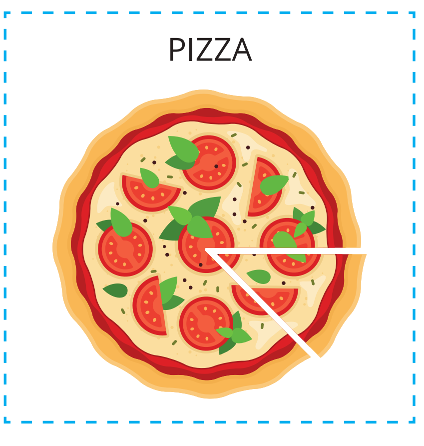


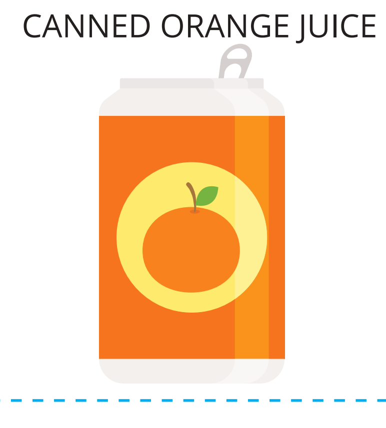


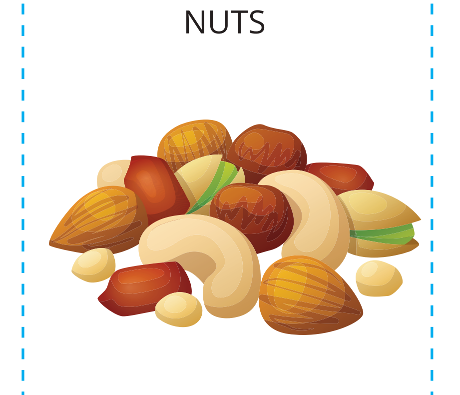


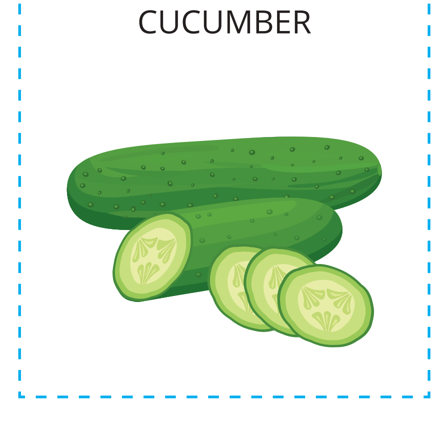


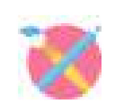












MY DIET

Read the definitions below. Write about or draw pictures of your diet.

Diet: (noun) The kind of food a person eats regularly.
A person's diet includes the amounts and types of foods they eat.

1. What is your diet? List the food you ate yesterday as part of your diet.

BREAKFAST	LUNCH	DINNER	SNACKS

Nutrient: (noun) An element of food that provides energy and is necessary for healthy growth.

2. Think about your diet. Which foods on your list do you think have nutrients to help your body?

____

____

____

____

____



I AM AN EXPERT

Work with others in your expert group to find the answers to the questions below. Find as many foods as you can that contain these nutrients.

My nutrient is (circle one): carbohydrates fats proteins

1. Explain what your nutrient is.

____

____

2. How does your nutrient help our bodies?

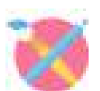
____

____

3. What foods contain your nutrient?

____

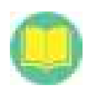
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LEARNING FROM MY CLASSMATES

Find information about the two nutrients you did not research. Record what you learn.

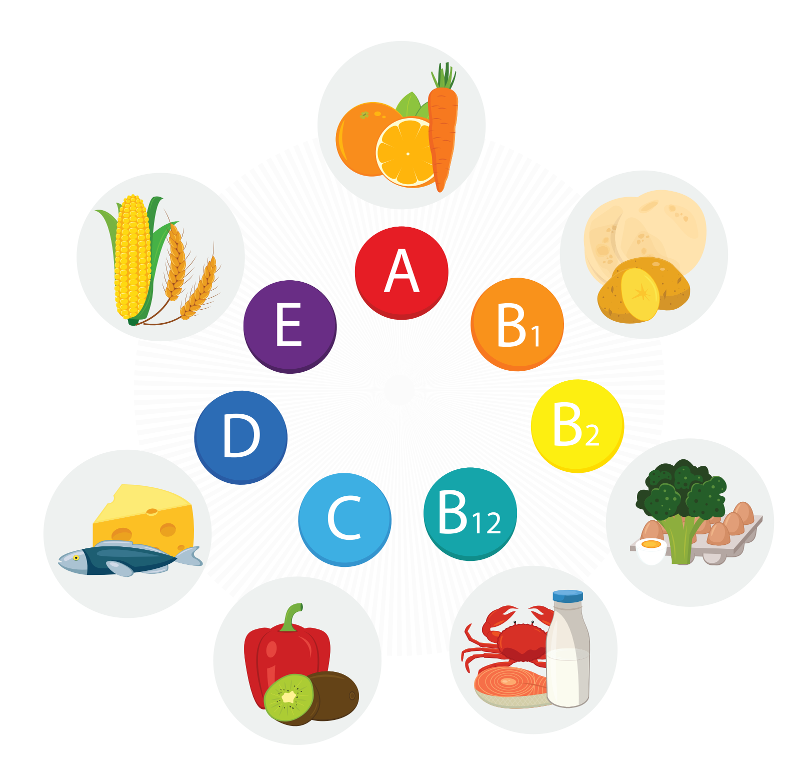
NAME OF NUTRIENT	WHAT IS THE NUTRIENT?	HOW DOES IT HELP YOUR BODY?	WHAT FOODS CONTAIN THE NUTRIENT?



VITAMINS AND MINERALS

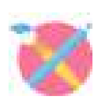
In which foods will you find the vitamins and minerals you need? Look at the charts to find your answers.

Vitamins: (noun) Important nutrients that are needed for normal growth and nutrition. The body needs many different vitamins in small amounts.



Minerals: (noun) Substance needed by the human body for good health. Minerals help form strong bones and teeth.





NUTRIENT SCAVENGER HUNT

Your teacher will give you a card with the name of a food on it. Go on a scavenger hunt to discover which nutrients you can find in your food.

Food ____________________

- ☐ Carbohydrate
- ☐ Protein
- ☐ Fat
- ☐ Vitamin
- ☐ Mineral

Food ____________________

- ☐ Carbohydrate
- ☐ Protein
- ☐ Fat
- ☐ Vitamin
- ☐ Mineral

Food ____________________

- ☐ Carbohydrate
- ☐ Protein
- ☐ Fat
- ☐ Vitamin
- ☐ Mineral



HOW MUCH SUGAR?

Read the information about sugar. Complete the sentences with a partner.

If you eat more sugar than the body needs for energy, it stores the energy for later. You can gain unhealthy weight.

Eating candy or cookies can give you energy. The sugar in these items can also make you feel jumpy or anxious.

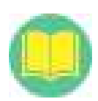


Eating sugar gives your brain a huge wave of energy. This confuses your brain. Even if your body has all the energy you need, your brain wants more and more sugar to feel that wave of pleasure.

Sugar affects arteries. It causes them to grow faster than normal. Eating more sugar than you need adds stress to your heart and damages it over time.

Eating too much sugar causes cavities in your teeth.

CAUSE	EFFECT
CAUSE: Eating too much sugar can affect our heart by:	EFFECT:
CAUSE: Eating too much sugar can affect our brain by:	EFFECT:
CAUSE: Eating too much sugar can affect our mood by:	EFFECT:
CAUSE: Eating too much sugar can affect our teeth by:	EFFECT:
CAUSE: Eating more sugar than our body can use for energy:	EFFECT:



TIME FOR A SNACK

Read the story. Circle the important facts in the story.

Yasmeen sat at the table, talking with her mother. She was eating a snack after playing outside with friends.

“Mother, I am so hungry. Thank you for having a snack ready for me.”

Mother turned from the stove and spoke to Yasmeen. “It is important that you build up your energy after playing so hard with your friends. I know this is one of your favorite snacks.”

“I love the dried fruit we make. I know it is good for me because we dried it ourselves. Drying the fig in the sun took out the water but left nutrients I need,” replied Yasmeen as she put a dried fig in her mouth.



Mother smiled. She was remembering how much she enjoyed making dried fruit with Yasmeen and Rashad. “Yes, the dried fruit tastes sweet because of nature. No sugar has been added so it makes it very good for you. Now that you have had your snack, are you ready to find your brother? He wants to show you a painting he just finished.”

Yasmeen got up from the table. “Yes, Mother. Can I take some dried fruit to Rashad too?”



WHAT IS IN THE PACKAGE?

Look at the labels for two packages of food. On the next page, write down what you SEE, what you THINK, and what you WONDER.





SEE–THINK–WONDER

I see...

I think...

I wonder...



HOW TO READ NUTRITION FACTS

Look at the diagram. Follow along as the class reviews the steps to read the nutrition facts on the label.

1. Start Here

Serving Size: Compare this to the portion you are eating

2. Check Calories

3. %Daily Value Guide

5% or less is LOW

20% or more is HIGH

4. Limit These Nutrients

5. Get Enough of These Nutrients

Nutrition Facts

Per slice (35g)

Amount	**% Daily Value**
Calories 85	
Fat 1 g	2%
Saturated 0.5 g + Trans 0 g	3%
Cholesterol 0 mg	0%
Sodium 150 mg	6%
Carbohydrates 15 g	5%
Fiber 3 g	13%
Sugars 2 g	
Protein 3 g	

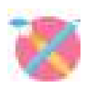
Vitamin A 0%	Vitamin C 0%
Calcium 6%	Iron 15%

What can you infer from this label about the healthiness of this food?

____

____

____



COMPARING BREAKFAST CEREAL

Look at the nutrition labels for three different breakfast cereals. Record the amount of nutrients in the chart. Answer the questions.

CEREAL A

Nutrition Facts

10 servings per container

Serving Size	40g
Amount per serving	
Calories	**165**
	% Daily Value
Total Fat 1 g	
Sodium 234 g	
Total Sugars 14 g	
Protein 1 g	
Vitamin D	28%
Iron	14%
Vitamin A	21%
Vitamin B6	35%
Vitamin B12	35%
Magnesium	0%
Zinc	14%

CEREAL B

Nutrition Facts

10 servings per container

Serving Size	40g
Amount per serving	
Calories	**122**
	% Daily Value
Total Fat 1 g	
Sodium 210 g	
Total Sugars 8 g	
Protein 4 g	
Vitamin D	11%
Iron	55%
Vitamin A	44%
Vitamin B6	44%
Vitamin B12	100%
Magnesium	22%
Zinc	28%

CEREAL C

Nutrition Facts

10 servings per container

Serving Size	40g
Amount per serving	
Calories	**143**
	% Daily Value
Total Fat 3 g	
Sodium 200 g	
Total Sugars 1 g	
Protein 4 g	
Vitamin D	14%
Iron	64%
Vitamin A	14%
Vitamin B6	36%
Vitamin B12	36%
Magnesium	11%
Zinc	36%

BREAKFAST CEREAL	TOTAL FAT	TOTAL SUGARS	PROTEIN
Cereal A			
Cereal B			
Cereal C			

1. Which cereal is the least healthy? ______________

What evidence did you consider for your answer?

____

____

2. Which cereal is the most healthy? ______________

What evidence did you consider for your answer?

____

____

3. How does the nutrition label help you decide which breakfast cereal is the healthiest choice?

____

____



ARE THESE PLANTS HEALTHY?

Look at the pictures of the plants. How are they the same? How are they different?







WHY WATER MATTERS

Read the information about water. Circle the words you do not know.

Have you ever noticed what happens to a plant if you forget to water it? The leaves will droop, and the plant can start to look limp. Plants need water to stay healthy. People need water just as much as plants do. Can you imagine people drooping from not drinking enough water? It happens, you just cannot see it as easily.

What does water do for your body?
Did you know that your body is mostly water? It is in every part of you. To make sure your body is working properly, you need to stay hydrated. Hydrated means you are drinking enough water to keep your body working at its best. Water:



- Keeps your body temperature at the right setting.
- Helps your joints move correctly.
- Keeps your bones cushioned.
- Gets rid of toxins and waste.

Why do we need to drink water?
Every day your body loses a lot of water from sweating and going to the bathroom. You lose water all the time, even when you breathe. If you lose too much water without replacing it, you can become dehydrated. That's why you need to drink water every day. You probably have not had enough water when you:

- Feel thirsty.
- Have a headache.
- Are tired (even if you got enough sleep).
- Feel dizzy or weak.





DOUBLE ENTRY JOURNAL

In the first column, record one important fact for each section of the text. In the second column, write what you think about the information you recorded.

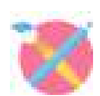
THIS INFORMATION IS IMPORTANT	I THINK...
What does water do for your body?	
Why do we need to drink water?	
Will any drink keep me hydrated?	



DRINK YOUR WATER

Fill in the cups to keep track of how much water you drink during the day.

SUNDAY	1	2	3	4	5	6	7	8	9	10
MONDAY	1	2	3	4	5	6	7	8	9	10
TUESDAY	1	2	3	4	5	6	7	8	9	10
WEDNESDAY	1	2	3	4	5	6	7	8	9	10
THURSDAY	1	2	3	4	5	6	7	8	9	10
FRIDAY	1	2	3	4	5	6	7	8	9	10
SATURDAY	1	2	3	4	5	6	7	8	9	10



TEACHING OTHERS ABOUT DRINKING WATER

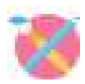
Decide how you will share why drinking water is important, such as by making a poster or making up a song. Record your ideas on the chart. Choose one to create.

What will you share?	How will you share it?



EVERYONE SHOULD DRINK WATER

Complete your final idea below. Use words and images to communicate your message.



KEEPING FOOD COLD

Read the text. Circle words you do not know.



Refrigerators are a type of container used to store food. They use electricity to keep the inside of the container cold, which helps the food last longer. Some hot and dry remote areas do not have electricity to use a refrigerator. Thousands of years ago, people in these areas found a solution to this challenge



The zeer pot is made from two ceramic pots, sand, and water. One of the pots is placed inside of the other. The space in between them is filled with sand. Finally, water is poured into the sand. As the water evaporates from the sand into the air, it takes heat with it. This cools the space inside the pot.



Zeer pots work best in the shade, since the sun will warm them quickly. They also work well in a breezy area because the wind makes the water evaporate faster. These pots are most effective in areas where the air is very dry.



MY IDEAS

Sketch ideas for two different containers you can make to keep food cold at the canteen.

IDEA 1

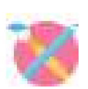
IDEA 2



MY TEAM'S PLAN

Share your original ideas with your team. Combine your ideas, or choose one idea to enhance. Sketch a design of your container and materials your team will test. Label each part of your sketch with the material you will use to build it.

FINAL DESIGN



GETTING FEEDBACK

Use the Traffic Light strategy with another team to give and receive feedback about your sketch. Circle the feedback you will use.

RED: What suggestions do you have for improving the container sketch?	______ ______ ______
YELLOW: What part of the container sketch is confusing?	______ ______ ______
GREEN: What part of the container sketch best meets the goal of keeping food cold?	______ ______ ______



TESTING OUR CONTAINERS

Read all instructions carefully before you begin to build your container.

1. Gather the materials you need to make your container.
2. Use your team's final design sketch to put the materials together to build your container.
3. Place an ice cube in a plastic sandwich bag. Seal the bag and place it in your container.
4. Put the container in the sun and leave it for 30 to 45 minutes.





FOOD STORAGE THROUGH TIME

Read the text about the timeline. Look at each of the different methods people have used to store food so that it lasts longer.

A timeline is a tool we can use to understand history. A timeline looks a lot like a number line. It lists events in the order they happened. We can see how much time went by between events.

Before 10,000 BC

Fire to heat and smoke

7,000 BC

Drying in the sun

2,500 BC

Baking dried grains

30 BC

Salt

1810 AC

Glass jars with cork (canning)

1920 AC

Electric refrigerator



TEST RESULTS

Observe what happened to the ice cube in each container. Record the results in order based on the size of the ice cube, largest to smallest.

SIZE OF ICE CUBE	MATERIALS TESTED
Largest	
Smallest	



1. Which material kept the ice cube the coldest? How do you know?

____

____

2. Which material was the least successful at keeping the ice cube cold?

____

____

3. Which material should we use in our food container at the canteen?

____

____





OUR CANTEEN PLAN

Use the space below to create the design plan and group presentation.

ELEMENT OF THE CANTEEN

DESIGN PLAN

Our Presentation

(Be sure to talk about how your element improves healthy living, explain your design plan, and discuss how your element works with the other groups.)



MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	☆	☆☆	☆☆☆
Academic Content	☆ I can identify choices that lead to healthy living with help.	☆☆ I can identify choices that lead to healthy living.	☆☆☆ I can identify a variety of choices that lead to healthy living.
Quality of Performance	☆ I can create an informative presentation explaining a design plan with help.	☆☆ I can create an informative presentation explaining a design plan.	☆☆☆ I can add unique details to create an informative presentation explaining a design plan.
Life Skills	☆ I can communicate my thoughts and ideas when working with teammates with help.	☆☆ I can communicate my thoughts and ideas when working with teammates.	☆☆☆ I can communicate my thoughts and ideas when working with teammates. I serve as the leader of my team.

Rubric Assessment (for teacher use)

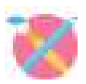
	Approaching Expectation (1)	**Meeting Expectation (2)**	**Exceeding Expectation (3)**
Academic Content	Identifies choices that contribute to healthy living with support from peers or the teacher. *Economics and Applied Sciences C.1.a. and b.*	Identifies choices that contribute to healthy living. *Economics and Applied Sciences C.1.a. and b.*	Identifies a variety of choices that contribute to healthy living. Models healthy choices for peers. *Economics and Applied Sciences C.1.a. and b.*
	Creates a presentation of a design plan that includes some of the three required parts. *Speaking and Listening A.2.a*	Creates a presentation of a design plan that includes the three required parts. *Speaking and Listening A.2.a*	Creates a unique or extraordinary presentation of a design plan that includes the three required parts. *Speaking and Listening A.2.a*
	Works with group members to create a design plan and short presentation but may have difficulty being cooperative. *Vocational Fields A.1.b*	Works cooperatively with group members to create a design plan and short presentation. *Vocational Fields A.1.b*	Works cooperatively with group members to create a design plan and short presentation. Shows leadership and assists teammates. *Vocational Fields A.1.b*
	Identifies natural resources that contribute to healthy living with help from peers or the teacher. *Science B.1.a*	Identifies natural resources that contribute to healthy living. *Science B.1.a*	Identifies a wide variety of natural resources that contribute to healthy living. *Science B.1.a*
Quality of Performance	Explains why a given choice does/does not support healthy living with help from peers or the teacher.	Explains why a given choice does/does not support healthy living.	Explains why a given choice does/does not support healthy living in thoughtful detail.
	Includes details in the design plan and presentation but they do not clearly connect to healthy living.	Includes details in the design plan and presentation that clearly connect to healthy living.	Includes details in the design plan and presentation that clearly connect to healthy living. The work is unique or especially thoughtful.
Life Skills	Has difficulty communicating with peers when completing a task together. *Communication*	Communicates effectively with peers when completing a task together. *Communication*	Communicates effectively with peers when completing a task together. Shows leadership and assists teammates in this area. *Communication*
	Describes the steps already carried out and the steps required moving forward with help from peers or the teacher. *Self-Management*	Describes the steps already carried out and the steps required moving forward. *Self-Management*	Articulates the steps already carried out and the steps required moving forward in an especially thoughtful or insightful way. *Self-Management*

WHEN HABITATS CHANGE



CLOSE OBSERVATIONS

What different parts of a habitat do you observe in the picture below?



KNOW, WONDER, LEARN

Record what you KNOW about habitats, then record what you WONDER. You will fill in LEARN at the end of the chapter.

HABITATS		
KNOW	WONDER	LEARN



MY LOCAL HABITAT

Draw a detailed picture of a local habitat. Label at least 8 items in the picture. Make sure you include plants, animals, and non-living things in the habitat.

Complete the sentence to describe how a living thing in the habitat meets a basic need.

A ____________________ meets its need for ____________________ by ______________________________.



A ZOOKEEPER'S JOB

Read the story. Answer the question below, using what you know about basic needs and habitats to support your answer.

Rashad was excited. His family was taking the train to the Giza Zoo.

"I cannot wait to see all the animals. When I grow up, I think I want to be a zookeeper," said Rashad.

"That job sounds like fun. But I think it would be pretty easy. All you need to know is what to feed the different animals," said Yasmeen.

"No way. You need to make sure the animals have a proper place to live. They need to have a shelter and enough space. That's the most important thing," said Rashad.

Rashad and Yasmeen's mother was listening to the conversation. She said, "Let's ask a zookeeper when we get there. I think zookeepers need to be able to prepare each animal's habitat AND provide the animals with the correct food. They probably have even more responsibility as well. All of the animals' needs are important."



Who do you agree with? Support your answer.



VOCABULARY: ORGANISM

Fill out the graphic organizer to record what you learn about the new vocabulary word.

Definition	Examples (written or drawn)

Use it in a sentence

____

____

Notes (clues to remember, synonyms, and so on)



HABITATS AT THE ZOO

Read the story.

When Rashad's family arrived at the Giza Zoo, they first looked at a map of the exhibits.

"I want to see the chimpanzees. We are learning about rainforests in school, and I would like to see an animal that lives there. Did you know that there are rainforests in Africa? They are south of the Sahara desert," said Rashad.

"What about the sea lions? There is an exhibit of South American sea lions. I read that they live in the Pacific Ocean. That is far away from Egypt and sounds interesting," said Yasmeen.

"I know we have fennec foxes in Egypt, but I have never seen one up close. Let's see if they have a fennec fox exhibit too," said Rashad's mother.

"Yes, they do. The fox house is over here by the flamingos," added Rashad as he pointed to one corner of the map.

"Ooh, I have always wanted to see an Egyptian cobra. But only from very far away or behind a pane of glass. Hmmm, do you think there are cobras in other parts of the world?" wondered Rashad's father.

"We can see all the different animals. I wonder how many animals we will see that do not live in habitats close to us. Let's keep track as we go," called Yasmeen.





HABITATS

Read about the habitat assigned by your teacher. Then on the following page, record what you learned.

No matter where you travel in the world, you can find a habitat. Habitats in different places have very different weather, plants, animals, and lands. Read below to learn more about habitats around the world.



POLAR HABITAT

A polar habitat is found near the north and south poles. The habitat is cold and windy. Some plants can survive in the cold and wind. Shrubs that grow close to the ground and moss that grows on rocks can survive. Sea lions and some whales can live in the cold water in polar regions. Ice covers large parts of a polar habitat. Polar bears, arctic foxes, and penguins live on the land. Penguins walk, gather, and sleep on the ice and swim in the water to find food.



RAINFOREST HABITAT

Rainforests are filled with trees and other plants, and rain falls almost every day. Rainforests are located near the equator where it is warm. Amphibians, such as frogs that need to have wet skin, survive well in a rainforest. Many animals in the rainforest rely on trees to survive. Macaws and spider monkeys live in the trees. Sloths also live in trees and eat their budding leaves and soft new branches. Large snakes crawl on the dark, warm, wet floor of the rainforest. The rainforest's tall trees block most of sunlight from reaching the ground. The plants that can grow on the ground have big leaves to help capture light.





GRASSLAND HABITAT

Grasslands are dry, flat areas of land. Grasslands have a few trees but mostly consist of tall grass and bushes where animals, such as birds, make their homes. Prairie dogs and rabbits can dig burrows in the dirt to find shelter. Lions and cheetahs live in a grassland habitat and hunt other animals for food. Grasslands can be found all over the world. In a tropical grassland habitat, the weather is warm all year. In temperate grasslands, the weather is warm in the summer and cool in the winter



WETLAND HABITAT

Wetland habitats are located where water and land meet. Often the land is covered in water, such as in a swamp. The water in these habitats can be saltwater or freshwater. Many animals that live in wetlands can survive both in water and on land. For example, turtles eat plants and animals that live in both water and on land. Many plants that live in wetlands either grow under or float on top of the water. Wetlands around the world can be warm or cool or have multiple seasons.



HABITAT RESEARCH

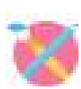
Record what you learned about the assigned habitat in the graphic organizer.

LIVING ORGANISMS

MY HABITAT

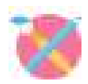
NON-LIVING THINGS

WEATHER/TEMPERATURE



COMPARING HABITATS 1

Work with a partner to compare the two habitats you were assigned, using the Venn Diagram below.



COMPARING HABITATS 2

Write 4 sentences comparing two habitats to inform others about what you discovered.

1. ____

____

____

2. ____

____

____

3. ____

____

____

4. ____

____

____



WHERE DO I LIVE?

Fill in the table by writing the animal name in the row of the habitat where it would live.

ANIMAL	HABITAT	EVIDENCE
	Rainforest	
	Polar	
	Grassland	
	Wetland	

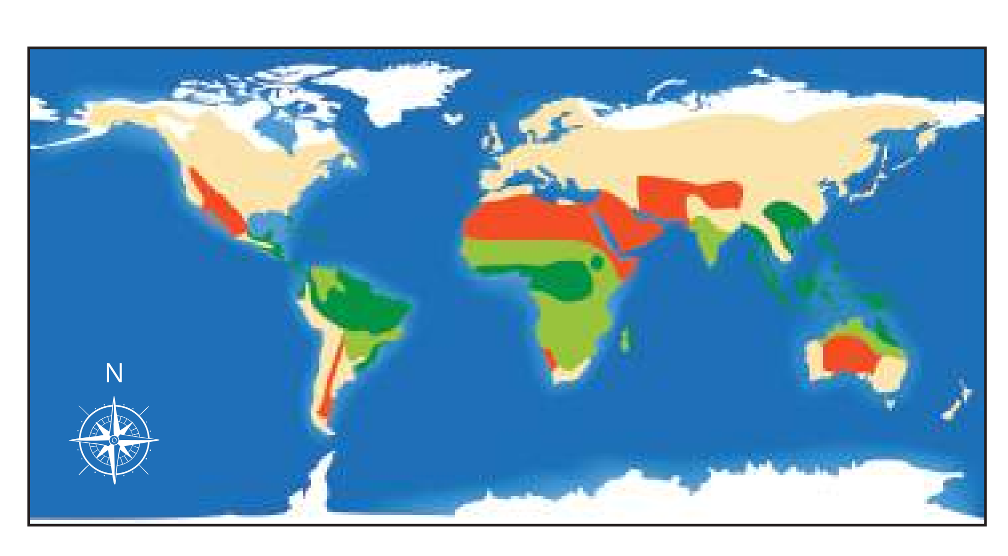


WHAT CAN WE LEARN FROM MAPS?

Compare the information provided on the maps below.







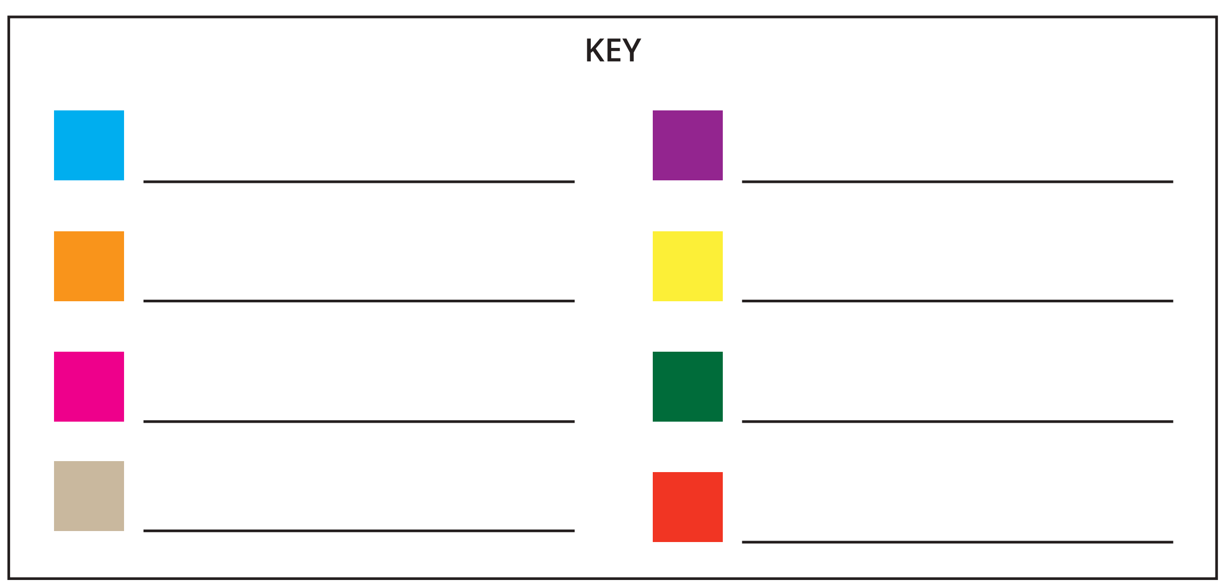


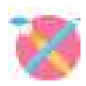
THE WORLD MAP

Study and discuss the map below. Complete the key.

Equator

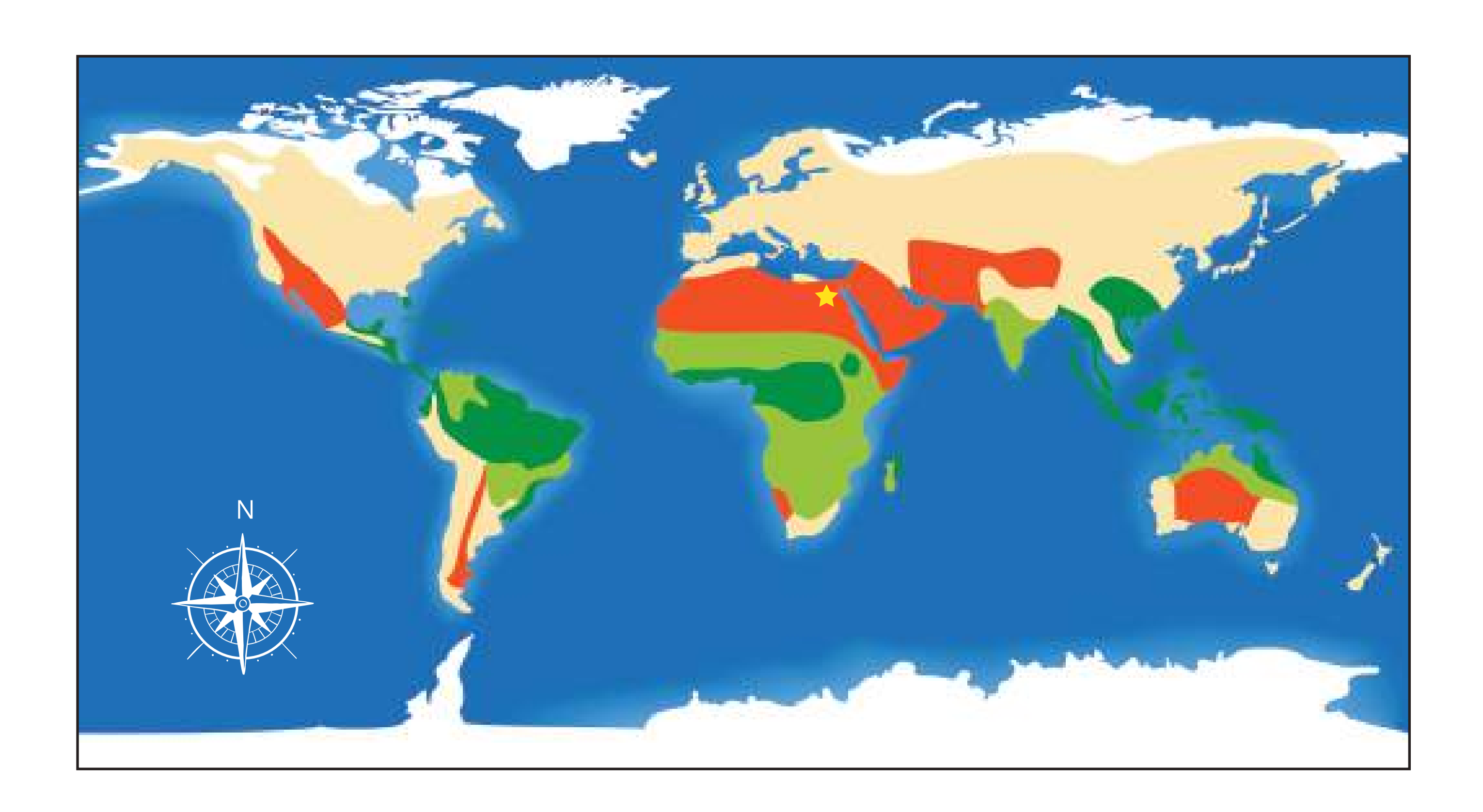
N

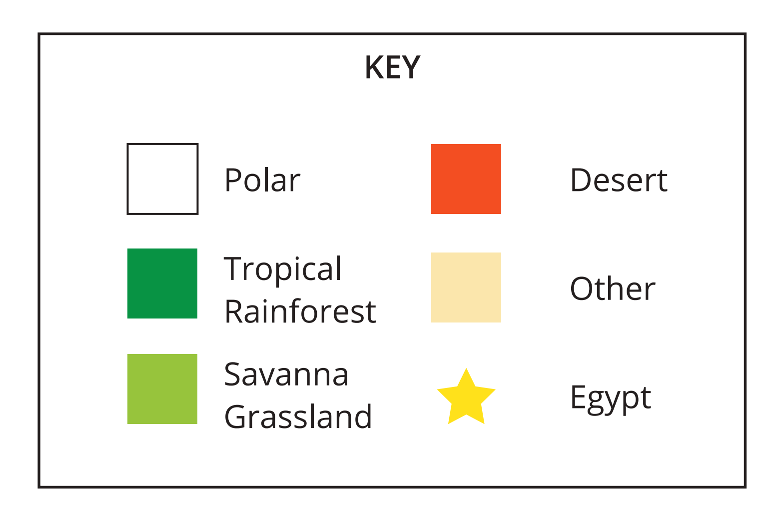




LOCATING HABITATS

Use the key and cardinal directions to discuss where habitats are in relation to Egypt.







WHERE MIGHT A MACAW LIVE?

Observe the image below and listen to the details given by the teacher.



NEEDS OF LIVING ORGANISMS

Underline or highlight examples of how plants and animals use the non-living parts of the habitat.

Animals need food, water, and shelter to live. They get these things from their habitat. Animals can move around to find food, water, and shelter. Many birds and insects can fly. Animals such as deer, lions, and rabbits can walk, run, or hop. Squirrels and monkeys can climb trees. Moving from place to place helps animals find what they need.

FOOD

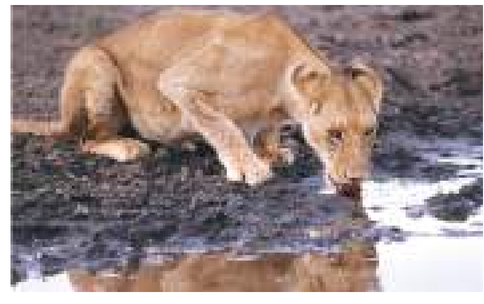
Animals get food in different ways. Lions chase and catch other animals for food. Rabbits eat plants. Raccoons and vultures eat dead animals that they find.



Rabbits take shelter in a burrow in their habitat.

SHELTER

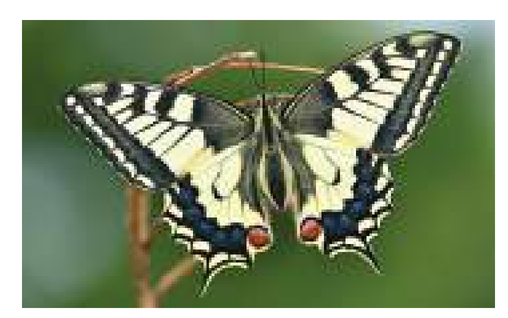
Animals also have different ways of getting shelter. Some birds build nests in trees. Moles and rabbits make holes or burrows in the ground. Squirrels and owls can use holes in trees. Animals such as crayfish, turtles, and frogs can hide under rocks.



Some organisms drink water from puddles.

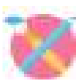
WATER

Animals have different ways of getting water, too. Some drink water from ponds, streams, or even puddles. Others drink water that has collected on plant leaves after a rainfall. Some animals live in water, so they are surrounded by it all the time.



Some living organisms move to new habitats when the seasons change.

When water, food, or shelter is hard to find, some animals move to other habitats. In Africa, zebras and elephants can walk many miles to look for water. Monarch butterflies fly south in the winter. They move to where the weather is warmer and there is more food.



IS THIS THE BEST HABITAT?

Choose one resource on ocean habitats to read. Write about one animal that would survive well in the habitat and another animal that would not survive well. Use evidence from your reading to support your answer.

_______________________ can live in an ocean habitat.

How does the ocean meet its needs?

- _______________________
- _______________________
- _______________________

_______________________ cannot live in an ocean habitat.

What needs are not met?

- _______________________
- _______________________
- _______________________



CHANGES IN THE ENVIRONMENT

Use one crayon to underline the cause and a different colored crayon to underline the effects of changes in the environment.

Natural disasters and other non-living things can affect the ability of living organisms to meet their needs in an environment.



DROUGHT

When there is no rain for a long time, the land becomes hard and cracked. Small ponds, rivers, and lakes can dry up. Plants may not be able to survive without enough water and animals may be forced to move to look for water.



FIRE

Wildfires can start when lightning strikes dry land and grasses. They can also start when a human-made fire gets out of control. Wildfires can harm the habitats of many plants and animals. Animals must leave to survive. Smoke from the fires pollutes the air. Fires can also help clean out dead litter on a forest floor. This allows important nutrients to return to the soil.



FLOOD

When dry land becomes covered with more water than the soil can hold, it creates a flood. A flood can be caused by heavy rains and storms. Floods can wash away soil and plants. Animals that cannot live in water must also move away from the flooded area. Floods can also bring new seeds and nutrients to the land.



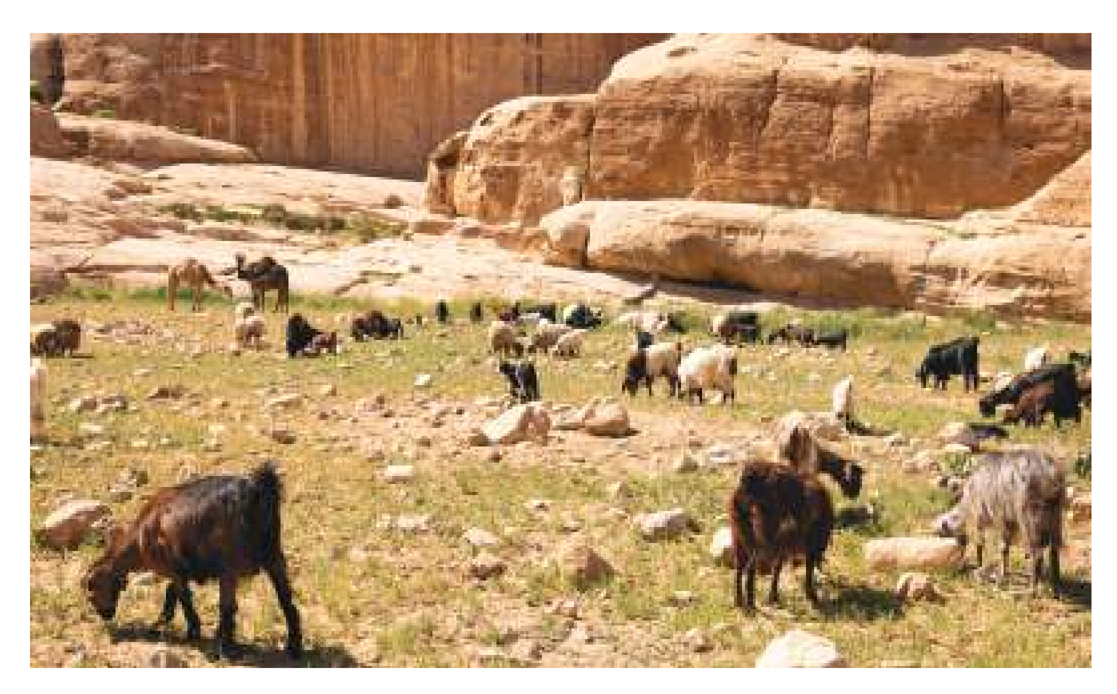
POLLUTION

Pollution can be caused naturally by volcanoes. Humans can also cause pollution by throwing trash or dumping chemicals into waterways, using machines that pollute the air, and leaving garbage on the land. Pollution in the air, water, and land can destroy habitats and harm wildlife.



PLANTS AND ANIMALS CAN CAUSE CHANGE

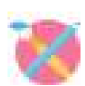
Look at the pictures and think about ways each living organism might benefit and harm the environment.



Goats grazing on the land.



Water hyacinth (ward el Nile) on the surface of a river

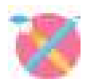


BENEFIT OR HARM?

Look at the image and read the change described in each row. Decide whether the change benefits or harms the environment, and circle your choice. In the effect column, explain the effect this action would have on the environment.

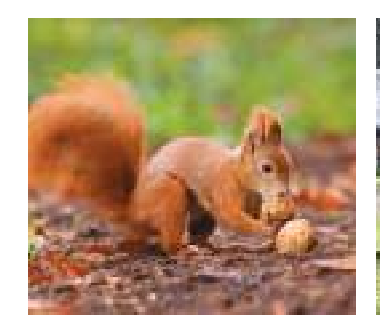
CHANGE		EFFECT
	A company clears a large area of land to build new apartments.	BENEFIT HARM
	An oil drilling platform is sunk in the Red Sea.	BENEFIT HARM
	A flood covers farmland.	BENEFIT HARM
	A volcano erupts and ashes fall on the ground.	BENEFIT HARM
	An oasis dries up from a drought.	BENEFIT HARM





RESEARCH

Research how one of the following living organisms benefits or harms the environment.



Squirrels hide nuts from trees.



Kangaroos graze on grassland.



A snakehead fish eats other fish and insects.



Freshwater crayfish feed on buds of plants.

My living organism: ______________________________

Ways it benefits the environment	Ways it harms the environment
______________________	______________________
______________________	______________________
______________________	______________________

Picture of my living organism

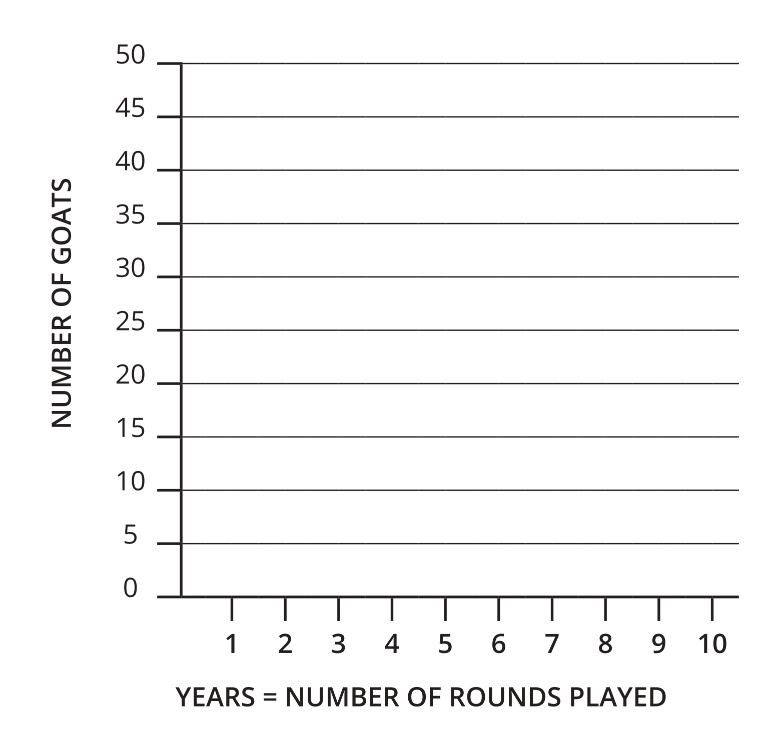


GOATS AND MORE GOATS

Record and analyze data from our simulation.



YEARS (ROUNDS PLAYED)	NUMBER OF GOATS AT THE START	NUMBER OF GOATS AT THE END OF EACH YEAR (ROUND)





ANALYZE SIMULATION RESULTS

1. What happened to the number of goats at the end of each year (round) during this activity?

2. During the activity, the goats experienced some very good years when the number of goats was large. What happened the following year and why?

3. During the activity, the goats experienced some very bad years when the number of goats was small. What happened the following year and why?

4. Why do you think the number of goats never stayed the same?

____

____

____

5. Based on this experience, how do you think a drought or flood affects the goats?

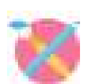
____

____

____

6. I learned ____ .





BROCHURE PLANNING

Complete the boxes to plan an informational brochure.

A problem that needs to be solved

Cause of the problem

Effect of the problem

Potential solutions:
(What can we do?)

Where to get more information

MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	☆	☆☆	☆☆☆
Academic Content	☆ I have difficulty providing examples of how living organisms can hurt or help one another.	☆☆ I can provide examples of how living organisms can hurt or help one another. I can offer realistic solutions.	☆☆☆ I can provide detailed examples of how living organisms can hurt or help one another. I can offer realistic solutions that are thoughtful and unique.
Quality of Performance	☆ I can create a brochure, but it is not very neat or well organized.	☆☆ I can create a brochure that is neat and well organized.	☆☆☆ I can create a brochure that is exceptionally neat and well organized.
Life Skills	☆ I have difficulty using a different point of view to evaluate things.	☆☆ I can evaluate things and ask questions using a different point of view.	☆☆☆ I can evaluate things and ask questions using a variety of points of view.

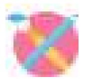
Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Provides examples of how living organisms can hurt or help the environment only with help from peers or the teacher. *Science E.1.b*	Provides examples of how living organisms can hurt or help the environment and offers realistic solutions. *Science E.1.b*	Provides multiple examples of how living organisms can hurt or help the environment and offers innovative solutions. *Science E.1.b*
	Gathers relevant information about a given topic from multiple sources only with help from peers or the teacher. *Writing D.3.a.*	Gathers relevant information about a given topic from multiple sources. *Writing D.3.a.*	Gathers relevant information from multiple sources. Suggests resources to others so they may learn more about the topic. *Writing D.3.a.*
	Explains the cause of an environmental problem and an effect only with help from peers or the teacher. *Reading F.3.a.*	Explains the cause of an environmental problem and a related effect with clarity. *Reading F.3.a.*	Explains the cause of an environmental problem and multiple related effects with clarity. *Reading F.3.a.*
	Records data collected by the class on a line plot with accuracy only with help from peers or the teacher. *Math D.4.a.*	Records data collected by the class on a line plot with accuracy. *Math D.4.a.*	Collects data independently and records it on a line plot with accuracy. *Math D.4.a.*
Quality of Performance	Creates a brochure that is not very neat or easy to read.	Creates a brochure that is neat and easy to read.	Creates a brochure that is exceptionally neat and visually appealing.
	Offers relevant evidence to support the explanation of how an organism can benefit and damage its environment only with help from peers or the teacher. *Science E.1.d.*	Offers relevant evidence to support the explanation of how an organism can benefit and damage its environment. *Science E.1.d.*	Offers unique or especially thoughtful evidence to support the explanation of how an organism can benefit and damage its environment. *Science E.1.d.*
Life Skills	Follows agreed upon rules while completing assigned tasks with others only with the help of peers or the teacher. *Collaboration*	Follows agreed upon rules while completing assigned tasks with others. *Collaboration*	Follows agreed upon rules while completing assigned tasks with others. Helps organize peers and leads in this area. *Collaboration*
	Asks relevant questions that align with an assigned point of view only with help from peers or the teacher. *Critical Thinking*	Asks relevant questions that align with an assigned point of view. *Critical Thinking*	Asks relevant questions that are especially insightful and align with an assigned point of view. *Critical Thinking*

CHAPTER 2

WATER, WATER EVERYWHERE

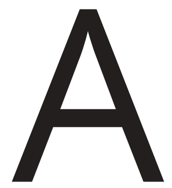




IMPORTANCE OF WATER

Use each letter in the word WATER to write ways water is important to us.

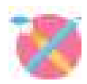




T

E

R



WATER IN OUR WORLD

Color 3/4 of the circle blue. Color the amount of water you see in each container as the teacher conducts the demonstration.

4 L
3 L
2 L
1 L

Total Water

4 L
3 L
2 L
1 L

Salt Water

250 ml
200 ml
150 ml
100 ml
50 ml

Fresh Water

250 ml
200 ml
150 ml
100 ml
50 ml

Total Liquid Water

250 ml
200 ml
150 ml
100 ml
50 ml

Frozen Water

250 ml
200 ml
150 ml
100 ml
50 ml

Usable Water



MY PLAN

List three ways you can conserve water at home.

1. ______________________________

____

____

2. ______________________________

____

____

3. ______________________________

____

____



RASHAD AND ZEINA VISIT THE MUSEUM

Read the story and underline important facts about an oasis. Circle any words you do not know.

Rashad and Zeina visited a museum with their class. Their favorite exhibit was about life in Siwa. The museum display provided many interesting facts about an oasis.

There was a picture on a map showing where the oasis is located. There was a basket and jar of olive oil to show how plants are used by the people who live there. Rashad and Zeina looked at a colorful chart that stated the average yearly temperature and rainfall. They wondered how the water cycle affects this environment.



Rashad's assignment was to record some facts about water in the oasis. Here is the description he read:

Rain that falls to the ground soaks deep into the earth. It forms lakes deep underground. An oasis is place in the desert where water comes up to the surface. This oasis gets a yearly average of less than 10 mm of rain. A spring is water bubbling up to the surface. The oasis has nearly 200 springs, making it Egypt's biggest.

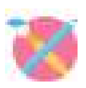
Zeina's assignment was to record notes about the oasis as a habitat. Here is the description she read:

This area has highlands, wetlands, and sand dunes. Water is very important here. The oasis helps date palm trees and olives grow. Plants like Egyptian acacia and tamarisk trees help block sandstorms. There are also plants like spearmint and basil.

The oasis is also rich in many kinds of wild animals, including the red-fronted gazelle and white deer. In addition, cheetahs, hares, and wolves have been observed here. Scientists have also spotted birds, such as houbara bustards, turtle doves, and greater flamingos. Did you know there are also more than 30 different kinds of reptiles and bugs in the oasis?

Before they left, Rashad and Zeina stopped to read one last description of how humans interact with the environment at the oasis:

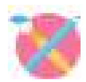
Siwans sell dates and olives all over the world. Dates and olives are also eaten and used in different forms in cooking. Many people use the palm fronds, or leaves, to make baskets to sell. Spearmint, basil, and dates are also used for medicines.



MY VOCABULARY

Share the words you circled with a Shoulder Partner. Discuss what you both think the words mean. If there are any words you and your partner do not know, write them here. If you have more than one word, use a different color for each.

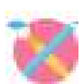
Definition	Examples (written or drawn)
Notes (clues to remember, synonyms, and so on)	



THE WATER CYCLE

Use the words in the box to write the correct word on the correct part of the water cycle.

evaporation	condensation	groundwater
precipitation		runoff



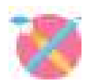
WEATHER VERSUS CLIMATE

Complete the Venn Diagram to compare weather and climate. Then write a definition of weather and climate.

WEATHER

BOTH

CLIMATE



MY LOCAL CLIMATE

Describe your local climate for relatives who want to visit from far away.

Region: ______________________________

Average temperatures: ______________________________

Average precipitation: ______________________________

The best time to visit is ______________ because ______________________

____

____

____



A TRIP THROUGH CLIMATE ZONES

Read the article on climates with a partner. Circle or underline parts of the water cycle as you read.

No two places on Earth have exactly the same climate. But climates can be grouped into categories. The categories are called zones. Each zone shares some general weather patterns. Let's take an imaginary trip to each zone.

It is cold out here! There is plenty of snow on the ground. We are in the polar zone. Temperatures are cold all year. Many polar climates are snowy. But some are very dry.



Animals like polar bears live in the polar zone.

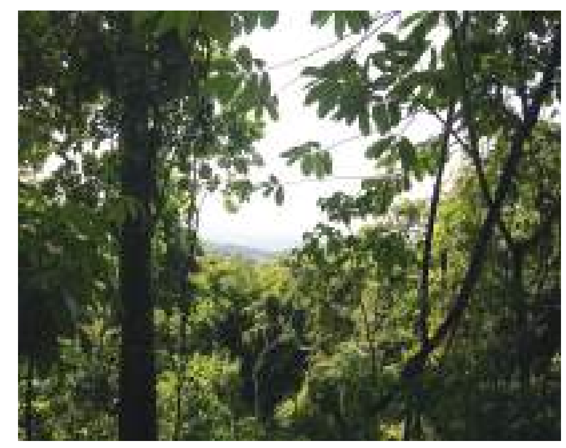
Now it is chilly. But the ground is green with grass. Snow-capped mountains surround the land. This is the mountain zone. Winters are cold. Summers are cool. It does not usually get hot in the mountain zone. Precipitation is moderate to heavy.



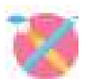
This is a mountain zone.

In the next climate zone, the air feels pretty warm. Insects are buzzing. Flowers are growing everywhere. It is summer time in the temperate zone. Here, the weather changes with the seasons. Summers are warm. Winters are cold. Precipitation is moderate all year.

Now we are in a hot and sticky climate zone. Tall trees make a canopy above our heads. There are many animals scurrying and creeping about. This seems to be a rain forest. We must be in the tropical zone. Tropical zones are pretty hot all year. They receive moderate to heavy precipitation.

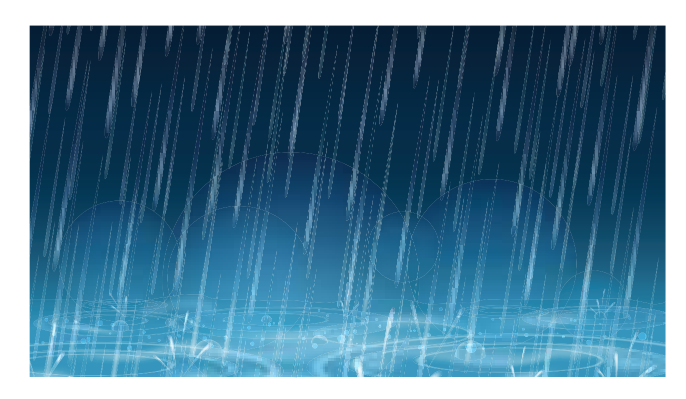


Tropical rain forests are one kind of place found in the tropical zone.



PRECIPITATION MATH

Use multiplication strategies to solve the story problems.

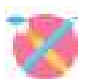


1. The meteorologist says it will rain all day. She says it will rain 7 mm an hour for the next 6 hours. How much rain will fall?

2. In the month of September, the meteorologist says it rained 3 mm each day for 5 days in a row. How much did it rain in total?

3. The climate scientist recorded that for 10 months of the year, it rained 4 mm each month. The other two months, no rain fell. What was the total rainfall for the year?

4. The meteorologist expects there to be rain for 6 days in a row. If it rains 12 mm each day, how much rain should we expect?



COMPARING EGYPT'S CLIMATES

Read the story to learn about climates in Egypt.



"My favorite time of the year is winter in Alexandria because the temperatures always feels a little cooler," said Rashad. "Even though it is rainy, I like the break from the hot and humid summer."

"One time we went to Luxor to visit family in the winter," replied Zeina. "But it was still so hot, and it had not rained in months. I was happy to get back home."

"That is so strange. Luxor and Alexandria are both in Egypt. I wonder why the weather was so different. Is it always like that?" asked Rashad.

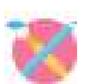
"I think so," said Zeina. "Luxor has a desert climate. It is hot and dry. But I still wonder if it ever rains there."

ALEXANDRIA - AVERAGE TEMPERATURES												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Min (°C)	9	9	11	13	17	20	23	23	21	18	14	11
Max (°C)	18	19	21	24	27	29	30	30	30	28	24	20

ALEXANDRIA - AVERAGE PRECIPITATION													
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
Prec.(mm)	55	30	15	4	1	0	0	0	1	9	30	55	196

LUXOR - AVERAGE TEMPERATURES												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Min (°C)	6	7	11	16	20	23	24	24	22	18	12	8
Max (°C)	6	7	11	16	20	23	24	24	22	18	12	8

LUXOR - AVERAGE PRECIPITATION													
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
Prec.(mm)	0	0	0	0	0	0	0	0	0	1	0	0	1



DESCRIBING CLIMATES IN EGYPT

Write two or three sentences to describe the climate in each city. Use weather data to support your answer.

Alexandria's Climate

___

___

___

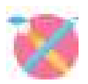
Luxor's Climate

___

___

___





AFRICA

Label the bodies of water surrounding Egypt. Use the map scale to determine the distance from Egypt to each body of water.

North Atlantic Ocean | South Atlantic Ocean | Mediterranean Sea

Indian Ocean | Red Sea | Gulf of Aden

Equator

1000km

Distance from Egypt to:

North Atlantic Ocean ______________ km

Red Sea ______________ km

South Atlantic Ocean ______________ km

Mediterranean Sea ______________ km

Gulf of Aden ______________ km

Indian Ocean ______________ km



CLIMATE DATA

Study the climate data. Think about what the data tell you about the city's climate and where the city could be located.

CITY #1 - TEMPERATURE (ºC)												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Max	-2	-2	0	3	8	12	15	14	10	5	1	-1
Min	-6	-6	-5	-2	2	6	9	7	4	1	-3	-2

PRECIPITATION												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
mm	100	100	60	70	60	60	70	80	100	130	120	130

CITY #2 - TEMPERATURE (ºC)												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Max	31	32	32	32	32	32	32	32	32	32	32	31
Min	23	24	24	24	24	24	23	23	24	24	24	24

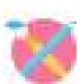
PRECIPITATION												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
mm	268	204	238	275	276	221	174	198	249	341	390	320

CITY #3 - TEMPERATURE (ºC)												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Max	6	7	10	13	17	20	22	21	19	14	10	7
Min	3	3	4	6	9	12	14	14	12	9	6	3

PRECIPITATION												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
mm	52	39	35	43	50	43	41	48	49	71	63	53

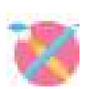
CITY #4 - TEMPERATURE (ºC)												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Max	23	26	30	33	36	37	35	35	33	30	27	23
Min	5	7	10	13	16	19	18	18	16	13	8	6

PRECIPITATION												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
mm	10	4	2	6	19	30	35	42	44	18	7	10



WHERE IN THE WORLD

Look at the world map. Using the climate data, write each city number in the correct circle to represent its location.



PRECIPITATION

Look at the data charts. Choose two cities. Create a line plot to show how many months had greater than 50 mm precipitation and how many months had less than 50 mm precipitation.

City: ______________________________

____

< 50 mm > 50 mm

City: ______________________________

____

< 50 mm > 50 mm



WATER ISSUES

Read about floods and droughts. Then fill out the cause and effect chart.

Flood

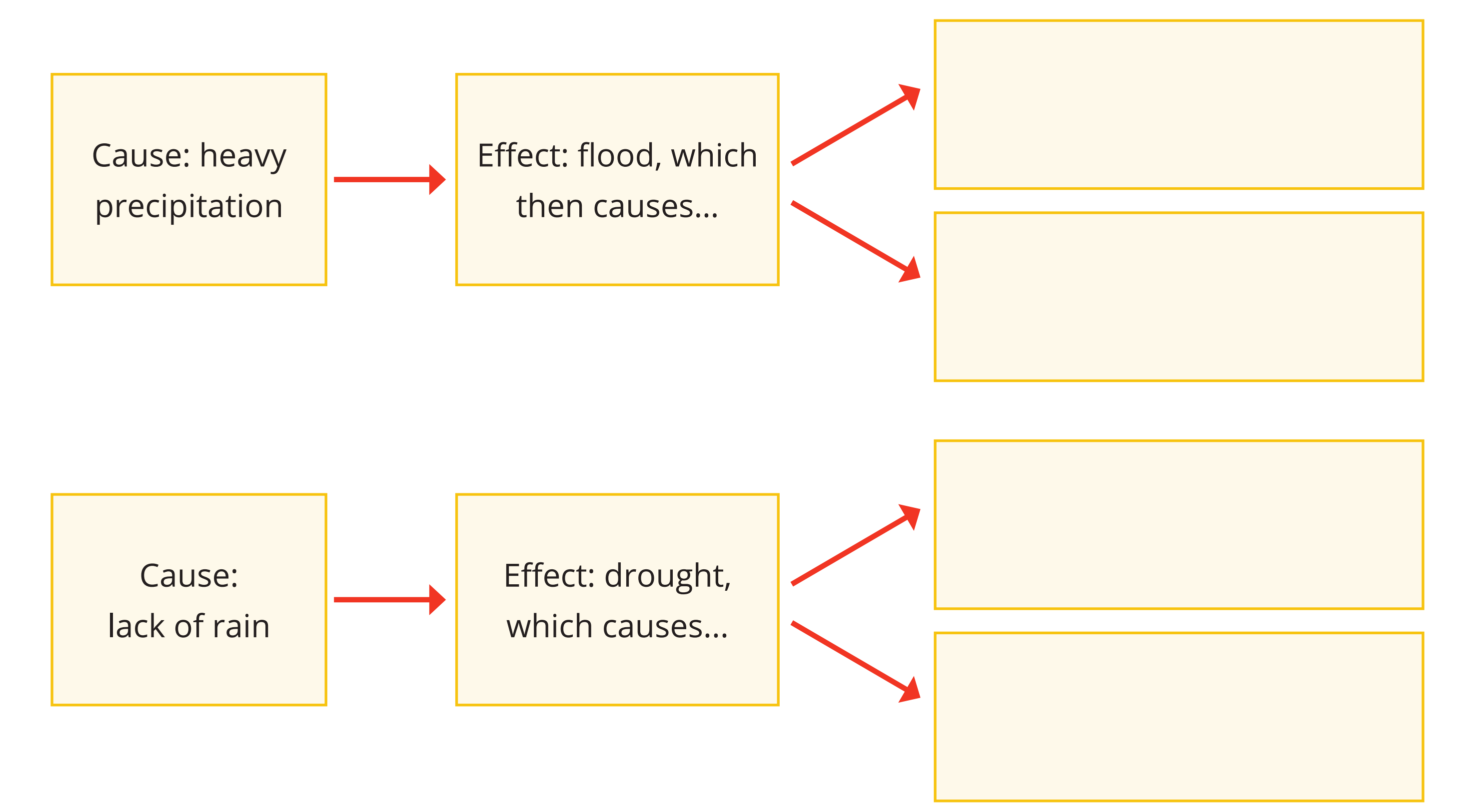
A flood occurs when water covers an area not usually covered by water. Floods are caused by heavy amounts of precipitation in a short period of time. When too much rain falls quickly, the ground cannot absorb the rainwater. Too much rainwater can cause rivers to overflow. Low-lying areas near the river are filled with water. Flood water can move quickly and can be dangerous to people. Major floods can even contaminate sources for drinking water.

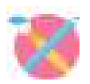


Drought

Droughts are caused by an extreme lack of precipitation. A drought happens when very dry weather lasts for an extended time. Droughts can cause rivers and lakes to dry up. Without access to water, plants may die. When farms experience a drought, people and animals have less food to eat. Depending on the local source, getting clean drinking water can also be difficult.





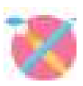


RESEARCHING A WATER ISSUE

Use the provided resources to research a major water issue. Record notes in the graphic organizer.

Water Issue: ____

IMPACT ON HUMANS	IMPACT ON PLANTS AND ANIMALS
IMPACT ON THE ENVIRONMENT	**CONNECTION TO THE WATER CYCLE**



FLOODS AND DROUGHTS

Make a claim about where these water issues might occur. Use evidence to support your answer.

Grassland	Desert	Rainforest	Wetland	Polar

A flood is most likely to occur ______________________________

because ______________________________

____

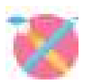
______________________________.

A drought is most likely to occur ______________________________

because ______________________________

____

______________________________.



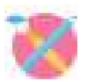
MUSEUM DISPLAY REQUIREMENTS

Review the requirements below. Assign one group member responsibility to lead work on each element of the display. As you work, return to this page to record progress.

Assigned habitat: ______________________________

Region of our habitat: ______________________________

COMPLETE	REQUIREMENT	GROUP LEADER
	A written overview of the climate in your habitat.	
	A description of where the habitat is found in the world, including your region.	
	A diagram of how the water cycle impacts the region, with an explanation of how the regional climate is related to the water cycle.	
	Information about at least two plants and animals that may be affected by the water cycle in your region. Format we will use: ______________________________	
	A world map showing the location of your region with a written description of factors that impact climate in your region. (Use the page Climate Region Map.)	



CLIMATE REGION MAP

Show the location of your region on the world map. Tear out this page and place it on your display.

N



MY RESEARCH NOTES

Write your habitat. Describe where your habitat exists in the world. Write your assigned region.Complete the boxes as you research your habitat and region.

My habitat: ______________________________

My habitat exists in these regions of the world: ______________________________

____

My assigned/selected region: ______________________________

Facts about the climate:	**Ways local climate is related to water cycle:**
Location factors that may impact climate:	**Plants and animals and how the water cycle affects them:**



BRAINSTORMING

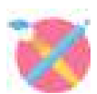
Use this page to brainstorm some ideas for your display.



WHAT I LEARNED

Write the name of the habitat in the first column of the chart. In the second column, record information about the habitat's climate. In the third column, record information about the water cycle. In the fourth column, record one question you still have about the climate presented.

HABITAT	CLIMATE	WATER CYCLE	I WONDER....?



MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	☆	☆☆	☆☆☆
Academic Content	☆ I can explain factors that impact the climate of a habitat with help.	☆☆ I can explain factors that impact the climate of a habitat on my own.	☆☆☆ I can explain factors that impact the climate of a habitat with details and evidence.
Quality of Performance	☆ I can share information but need help to make it interesting or be creative.	☆☆ I can share information in an interesting way that shows my creativity.	☆☆☆ I can share information in a unique way that shows exceptional creativity.
Life Skills	☆ I did not use the checklist and included less than the five required parts in my display.	☆☆ I used the checklist to ensure I included all five of the required parts in my display.	☆☆☆ I used the checklist to ensure that all five of the required parts are included in my display and helped my team break down parts into smaller tasks to track.

Rubric Assessment (for teacher use)

	Approaching Expectation (1)	**Meeting Expectation (2)**	**Exceeding Expectation (3)**
Academic Content	Describes most stages of the water cycle while identifying the states of matter throughout with support from peers or the teacher. *Science B.1.c.*	Describes all stages of the water cycle while identifying the states of matter throughout. *Science B.1.c.*	Describes all stages of the water cycle while identifying the states of matter throughout. Includes variations found in different climates. *Science B.1.c.*
Academic Content	Explains the factors that contribute to the climate of a given habitat with support from peers or the teacher. *Science B.1.d, e.*	Explains the factors that contribute to the climate of a given habitat. *Science B.1.d, e.*	Explains the factors that contribute to the climate of a given habitat in detail. *Science B.1.d, e.*
Academic Content	Uses a map to identify the location of a habitat with support from peers or the teacher. *Social Studies C.1.b. and c*	Uses a map to correctly identify the location of a habitat and nearby bodies of water. *Social Studies C.1.b. and c*	Uses a map to correctly identify the location of a habitat and nearby bodies of water. Explains the connection between geography and climate. *Social Studies C.1.b. and c*
Academic Content	Expresses some understanding of the content when working with peers. May include inaccurate information or need support to explain. *Speaking and Listening A.2.a.*	Expresses accurate understanding of the content when working with peers. *Speaking and Listening A.2.a.*	Expresses an exceptional understanding of the content when working with peers. Supports the learning of others. *Speaking and Listening A.2.a.*
Quality of Performance	Creates an accurate diagram of the water cycle with support from peers or the teacher.	Creates an accurate diagram of the water cycle.	Creates an accurate and detailed diagram of the water cycle.
Quality of Performance	Supports the creativity of peers when creating a museum display but may need support to contribute ideas.	Shows creativity when creating a museum display with peers.	Shows exceptional creativity and contributes unique ideas when creating a museum display with peers.
Life Skills	Contributes to group work with guidance from peers or the teacher. *Sharing and Self-Management*	Contributes to group work by taking on tasks that match personal strengths. *Sharing and Self-Management*	Contributes to group work by taking on tasks that match personal strengths. Takes on a leadership role and helps organize the group. *Sharing and Self-Management*
Life Skills	Accepts the ideas and opinions of others while collaborating. May need support responding respectfully. *Collaboration*	Accepts the ideas and opinions of others by collaborating respectfully. *Collaboration*	Accepts the ideas and opinions of others by collaborating respectfully. Shows leadership in this area by modeling respect for others. *Collaboration*

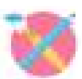
HOW CAN I HELP?





WHAT DO YOU THINK?

Study the picture below. Look for clues to help you predict what we will learn in this chapter.



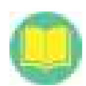
WE WILL STUDY...

Observe the image for information about the topic for this chapter.

____

____

____



ALEXANDRIA FLOODS

Read the story with a partner.

Zeina was playing at Rashad's house after school. It was raining outside.

"It has been raining all day. I wish we could go outside," complained Rashad.

"I know," replied Zeina. "Every time it rains this much, I worry about flooding."

"Flooding?" asked Rashad.

"Yes. That is when the water covers areas that are not normally under water. Sometimes it comes up from the sea. Sometimes it happens because the streets do not drain well when it rains a lot," explained Zeina. "When we were 3 years old, there was a BIG flood here in Alexandria."

"Really? I don't remember," said Rashad.



"Oh yes. My uncle is a fisherman. He lived on the canal, but the water came into his home and ruined it. In some places, the banks of the canal were no longer safe. He had to move to a new home," said Zeina.

Rashad's mom was in the kitchen and was listening. "When the city was flooded, we were all stuck at home for over a week. We could not go into the streets because they were covered in water," she said.

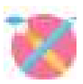


"Wow. That sounds scary," said Rashad.



"The flood also washed away my favorite beach," said Rashad's mom.

"I wonder if there is a way we can help protect our home from a flood," said Rashad.



IDENTIFYING IMPACTS

Record the impacts of flooding that you read about in the story. Add other impacts that you can recall from previous learning.

PEOPLE	ENVIRONMENT



FLOODS IN 2015

Read the nonfiction passage about the floods in 2015. Then record two key details from the reading.



In October of 2015, Alexandria experienced extreme rainfall that led to severe flooding. This was an unusual event. On average, Alexandria receives 20 cm of rain a year. During the 2015 floods, the city was drenched with more than 20 cm of rain in just two days. The severe flooding impacted the local environment and the citizens of Alexandria.

Flood waters covered streets. Flood waters entered the street level of businesses and other buildings. It was difficult and dangerous to leave buildings while the streets were flooded. Traveling in the city was also difficult. People were unable to go to work for over a week. The flood waters also caused over two dozen homes to collapse. The heavy rain caused citizens to lose electricity.

The flooding happened quickly. Weather scientists predicted flooding, but there was no flood warning system. Pipes and canals built to carry the water away were overwhelmed. Some people were out for the day and had trouble getting home.

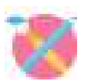
Citizens helped one another get out of the flood waters and safely home. Some even brought nearby fishing boats onto the streets to help get people to safety. Neighbors shared food and supplies while stores were not open. Police helped guard the town. They directed people around dangerously flooded areas. Emergency responders worked to help people who were sick or injured.

After the floods, the local government began looking for ways to minimize the effects of heavy rain and flood water in the future. Some solutions, such as better drains and more pumps were quickly installed. Technology solutions, such as flood warnings sent to cell phones and computer sensors that can measure flood waters, have also been considered.

MAIN TOPIC

KEY DETAIL

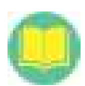
KEY DETAIL



VOCABULARY: VOLUNTEER

Complete the graphic organizer to help you learn the new word.

Definition	Examples (written or drawn)
Use it in a sentence ____________________ ____________________	
Notes (clues to remember, synonyms, and so on)	



BEING A GOOD CITIZEN

Read the story. Listen for examples of volunteering.

Rashad and Zeina continued thinking about the Alexandria floods on their way to school the next day.

"I think it is really cool that fishermen helped people move through the flood waters with their boats," said Zeina. "I will ask my uncle if he did that too."

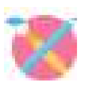
"People helped other people. That is pretty awesome," added Rashad.

"If I was old enough, I would have helped bring food to people stuck at home. What would you have done, Rashad?" asked Zeina.

"I am not sure. I wonder if my favorite bakery would have needed help cleaning up after the flood. Maybe I could have helped them," offered Rashad.

"That is a great idea. When we get to school, let's see if our teacher did anything to help the school after the flood," called Zeina as she started running to get to school.





I CAN VOLUNTEER

Write a letter to your family. Ask them to help you find a volunteering opportunity in the community. Provide reasons why volunteering would have a positive impact on the community.



I CAN LEAD

Write two sentences to tell why you would make a good leader.

1. ____

____

2. ____

____

MY BALLOT

I vote for:

____



FLOOD PREVENTION

Look at the images of each flood prevention method. Read the captions to learn more.



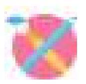
Dams: *Dams are used to stop rising water from entering a river or canal. After the rain stops, the water can be slowly released, preventing severe flooding.*



Sandbags: *People put sandbags around their property to prevent floodwaters from entering. The moving flood waters are diverted around the sandbags.*



Canals: *Flood waters are diverted into canals to move the water away from city areas. Canals can lead either to larger bodies of water or to temporary ponds.*



JOBS CAN HAVE AN IMPACT

Take notes as you read about your assigned job. Make sure you answer each question.

Job: ____

What responsibilities does the worker have?

____

____

____

How does the worker positively contribute to the community?

____

____

____

What challenges does the worker face doing their job?

____

____

____



WHAT MAKES A GOOD LEADER?

Circle the traits or characteristics that make your selected person a good leader.

calm	brave	funny
bossy	responsible	moody
lazy	mean	polite
generous	wise	cooperative
selfish	angry	cowardly
loyal	caring	helps others
	good communicator	





AN INTERVIEW WITH A LEADER

Write a script that you and a friend can act out.

Reporter: This is ______________________ with the news. Today I will be interviewing
(name)

______________________ .

Leader: ____

____
(Write a greeting.)

Reporter: Can you tell us what Egypt was like when you were young?

Leader: ____

____
(Describe what life in Egypt was like when you were a small child.)

Reporter: When and where were you born?

Leader: ____

____
(Describe where and when you were born.)

Reporter: What did you do that made you famous?

Leader: ____

____
(Describe why you are a famous leader.)

Reporter: What are the traits that made you such an important leader?

Leader: ____

____

(Describe your leadership traits.)

Reporter: ____

____

Leader: ____

____

Reporter: Thank you for the interview, ____________________ .

Leader: ____

____

(Write a response.)



A PROBLEM AT THE OASIS

Read the story, answer the question, and label the pictures with the bold words in the story.

The oasis brings clean water from deep underground to the surface. In the past, people created a shadoof to gather and use water from the oasis. A **shadoof** is a pole with a bucket and a weight, like a large stone.



____

Today we can use modern technology to pump water from deep wells. A **freshwater pump** uses electricity and pipes to move large amounts of water. That means more water can be used. If more water is available, people can irrigate more crops. A larger date palm orchard can mean more income, or money earned from selling things.



____

But the new technology also has challenges. If too much water is pumped, it can sit in unused ponds and be wasted. It takes a long time for small amounts of rain to replace the underground water in an oasis. People have to think about how to balance earning more money and protecting the environment.



GAMEBOARD DECISION CARDS

Cut out the cards. Place them face down in a pile in random order. Take turns reading a card and moving the correct number of spaces.

Pump for your well breaks

Buy new, bigger pump and irrigate more land. Go back 3 spaces.

Fix pump. Move ahead 2 spaces.

Sell a bushel of dates

Buy new shoes. Move ahead 2 spaces.

Plant a fruit tree and alfalfa under a date palm tree. Move ahead 5 spaces.

Share land for farming

Move ahead 4 spaces.

Design a way to clean wastewater to use for irrigation

Move ahead 5 spaces.

Prune crown of date palm tree

Fall out of tree. Go back 5 spaces.

Double your crop of dates. Go ahead 2 spaces.

Repair a leaky water pipe

Move ahead 3 spaces.

Sell pottery made from clay

Buy more supplies to make more pottery. Move ahead 3 spaces.

Buy food for family. Move ahead 2 spaces.

Buy a cow

Sell extra milk to families in the community. Move ahead 4 spaces.

Buy feed for cow. Move back 2 spaces.

Seasonal flood comes

Replaces water in the oasis. Move ahead 5 spaces.

Removes salt from the soil. Move ahead 3 spaces.

Drill new water well

Pay for deep drilling. Move back 5 spaces.

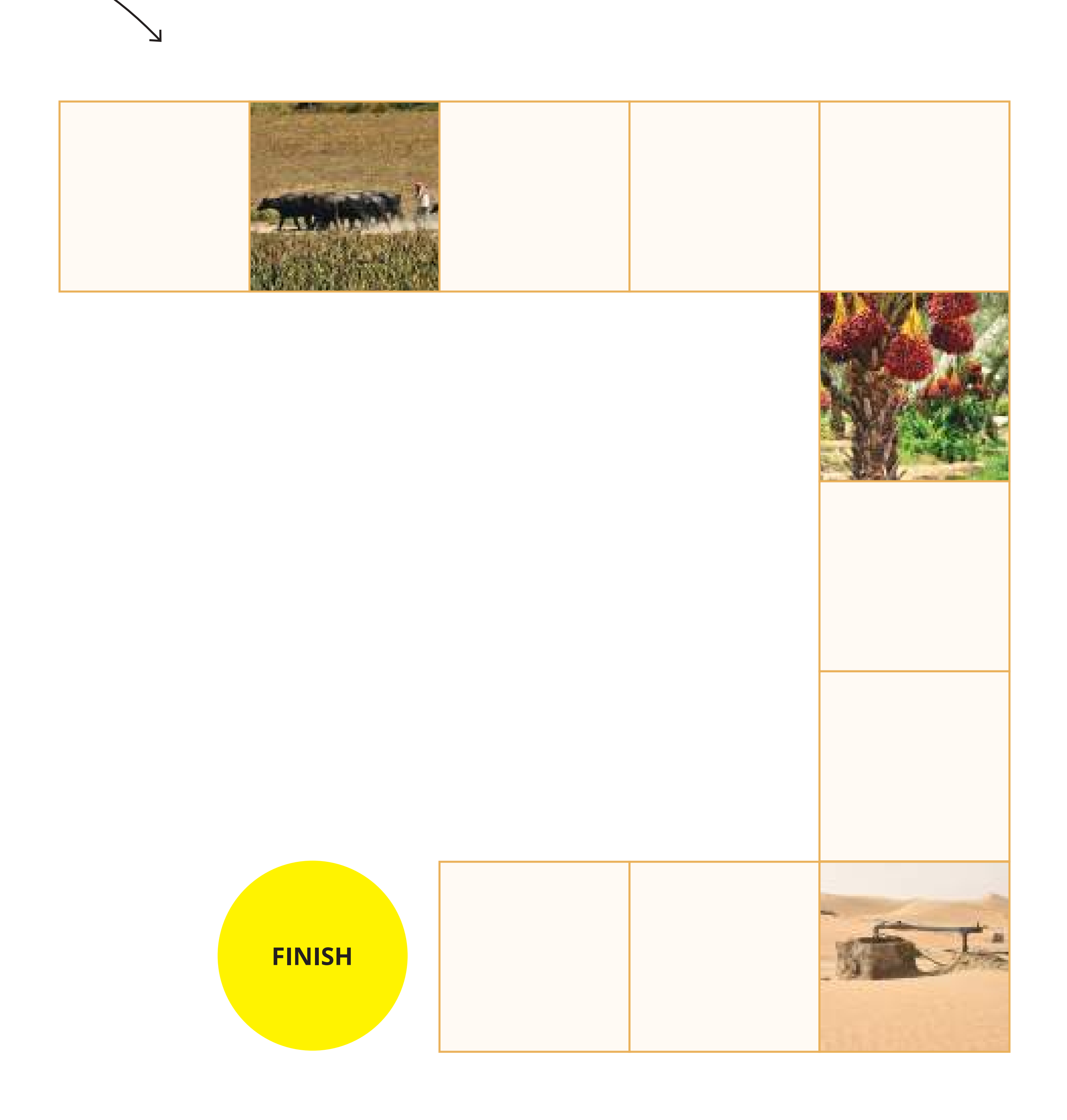
Noise of new well keeps you awake and too tired to tend to crops. Move back 2 spaces.

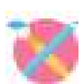


GAMEBOARD

Use this gameboard to play the game.

START


FINISH



I CAN HELP

Record the type of trash (paper, plastic, or metal) you pick up and where you find it.

TYPE OF TRASH	LOCATION



ADVANTAGES AND DISADVANTAGES

Consider the effects of posting a camera at school to help with an anti-littering campaign. Brainstorm some advantages and disadvantages of this technology.

1. What are some advantages of using camera technology?

___

___

___

2. What are some disadvantages of using camera technology?

___

___

___





TECHNOLOGY AND FLOODS

Complete the graphic organizer to consider how a specific type of technology could be used to prevent or respond to flooding.

One disadvantage:

____

____

Technology I chose:

____

This technology can

______________________________.

This could help because

____

______________________________.

This technology can

______________________________.

This could help because

____

______________________________.

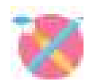
This technology can

______________________________.

This could help because

____

______________________________.



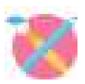
BUILD A PYRAMID

Look at the code pictured. Complete the rest of the code to create a pyramid.

0

1 2 3 4

Write the rest of the code below to complete the pyramid.



SCANNING THE ALEXANDRIA FLOOD

Write code that will instruct the camera to fly over every square of the area shown below, then return to the starting point. Use only the code options given below, but you can use this code in any order you choose.

↑	1 step up	⇧	5 steps up
↓	1 step down	⇩	5 steps down
→	1 step right	⇨	5 steps right
←	1 step left	⇦	5 steps left



ENGINEERING DESIGN PROCESS

Review the steps of the design process.

IDEA

MATERIALS

PLAN

BUILD

TEST

IMPROVE



MY IDEAS

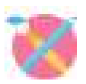
List three ideas you have for a flood barrier.

1. ______________________________

2. ______________________________

3. ______________________________

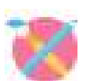




WHAT CAN WE IMPROVE?

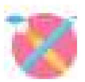
Take notes about what you observe. What works well? What needs to be improved?

WHAT WORKS WELL?	WHAT CAN BE IMPROVED?



MY REDESIGN

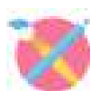
Draw and label a redesigned flood barrier. Explain what you chose to change and why.



LETTER TO THE COMMUNITY

Address your letter to a community member. Write a helpful letter based on something new you learned.

Dear ______________________________ ,



MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	☆	☆ ☆	☆ ☆ ☆
Academic Content	☆ I can explain the impact of flooding and how it can be prevented with help.	☆ ☆ I can explain the impact of flooding and how it can be prevented.	☆ ☆ ☆ I can explain the impact of flooding and how it can be prevented using specific details.
Quality of Performance	☆ I can help to create a flood barrier but need help to explain why it is effective and how it can be improved.	☆ ☆ I can help to create a flood barrier and explain why it is effective and how it can be improved.	☆ ☆ ☆ I can help to create a flood barrier, explain in detail why it is effective, and offer multiple ways it can be improved.
Life Skills	☆ I can use data and the ideas of others to improve a design with help.	☆ ☆ I can use data and the ideas of others to improve a design.	☆ ☆ ☆ I can use data and the ideas of others to improve a design. I can assist classmates and lead in this area.

Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Works with a group to discuss and combine ideas for an effective flood barrier but offers minimal assistance. *Science B.1.g*	Works with a group to discuss and combine ideas for an effective flood barrier. *Science B.1.g*	Works with a group to discuss and combine ideas for an effective flood barrier. Takes on a leadership role and helps organize the group. *Science B.1.g*
	Makes observations about the effectiveness of materials used for a flood barrier with support from peers or the teacher. *Science D.1.a*	Makes observations about the effectiveness of materials used for a flood barrier. *Science D.1.a*	Makes especially insightful observations about the effectiveness of materials used for a flood barrier. *Science D.1.a*
	Explains how floods can be prevented in different regions of the world with support from peers or the teacher. *Social Studies C.2.b*	Explains how floods can be prevented in different regions of the world. *Social Studies C.2.b*	Explains various ways that floods can be prevented in different regions of the world. Shares why a method is effective in a given place. *Social Studies C.2.b*
	Works with a group to discuss the effectiveness of their barrier and how to make improvements to it but offers minimal assistance. *Vocational Fields A.1.b*	Works with a group to discuss the effectiveness of their barrier and how to make improvements to it. *Vocational Fields A.1.b*	Works with a group to discuss the effectiveness of their barrier and how to make improvements to it. Takes on a leadership role and helps organize the group in this work. *Vocational Fields A.1.b*
Quality of Performance	Explains which materials should or should not be used to create an effective barrier with support from peers or the teacher. *Science D.1.b*	Explains which materials should be used to create an effective barrier and identifies materials that are not as helpful. *Science D.1.b*	Explains which materials should be used to create an effective barrier and identifies materials that are not as helpful. Provides exceptional detail or an especially thoughtful explanation. Science D.1.b
	Illustrates, labels, and explains a redesign plan in an unclear way that is not easily understood.	Illustrates, labels, and explains a redesign plan that is clear and easily understood.	Illustrates, labels, and explains a redesign plan that has exceptional detail and/or a unique solution.
Life Skills	Shows little willingness to listen respectfully and accept the ideas of others, especially when they differ from their own. *Respect for Diversity*	Shows a willingness to listen respectfully and accept the ideas of others, especially when they differ from their own. *Respect for Diversity*	Shows an exceptional willingness to listen respectfully and accept the ideas of others, especially when they differ from their own. Serves as a role model for peers in this area. *Respect for Diversity*
	Collects accurate data about the effectiveness of the group's barrier with support from peers or the teacher. *Problem-Solving*	Collects accurate data about the effectiveness of the group's barrier. *Problem-Solving*	Collects accurate data about the effectiveness of the group's barrier. Takes on a leadership role and helps organize the group in this work. *Problem-Solving*

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